



MONTGOMERY WATSON

February 24, 2000

Mr. Kevin Adler
Remedial Project Manager
U.S. Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, IL 60604-3590



Re: Groundwater Monitoring Report – September 1999
ACS NPL Site

Dear Mr. Adler:

Please find enclosed two copies of the Groundwater Monitoring Report for September 1999. In accordance with the ACS Groundwater Monitoring Plan, the sampling activities included collecting water levels at the network level-measuring stations, collecting samples for contaminant analysis from upper and lower aquifer monitoring wells, and collecting samples for contaminant analysis from local residential supply wells.

We are also sending two copies of this report to IDEM and to Black & Veatch Waste Systems. If you need additional copies of this report please let me know and we can forward them to you, or whomever you specify.

Sincerely,

Peter J. Vagt, Ph.D., CPG
Project Manager

cc: S. Grady (2 copies of report)
S. Mrkvicka, B&V (2 copies of report)
ACS Technical Committee (1 copy of report to each member)

CAS
J:\1252\042\September 99 report\3_99 EPC Cov.doc
1252042.221601

**TECHNICAL MEMORANDUM
SEPTEMBER 1999 GROUNDWATER MONITORING REPORT**

**AMERICAN CHEMICAL SERVICE SUPERFUND SITE
GRIFFITH, INDIANA**

Montgomery Watson File No. 1252042

Prepared For:

ACS RD/RA Executive Committee

Prepared By:

**Montgomery Watson
27755 Diehl Road, Suite 300
Warrenville, Illinois 60555**

February 2000



MONTGOMERY WATSON

EXECUTIVE SUMMARY

The long term groundwater monitoring plan at the American Chemical Service, Inc. (ACS) National Priorities List (NPL) Site in Griffith, Indiana, consists of semi-annual sampling of the 44 wells in the monitoring network. In addition, three of the monitoring wells, MW48, MW49, and MW9R are sampled on a quarterly basis and five private wells in the vicinity of the Site are sampled once each year. For one of the semi-annual sampling events, the monitoring well samples are analyzed for the full Target Compound List and Target Analyte List (TCL/TAL) parameters. For the other major sampling event, the samples are analyzed for a reduced list of indicator parameters. Each quarter, water levels are measured at all monitoring network points in a single 24-hour period.

This Technical Memorandum summarizes the September 1999 groundwater monitoring activities at the ACS NPL Site. The September sampling combined the minor, three-well sampling event with the collection of samples from the five private wells. In addition, MW10C was sampled for volatile organic compound (VOC) indicator parameters due to a baseline exceedance of benzene during the June 1999 quarterly sampling event. All samples and analyses were conducted in accordance with the September 1997 U. S. Environmental Protection Agency (U.S. EPA) approved sampling plan.

SITE HYDROGEOLOGY

The regional groundwater flow in the upper aquifer is from east to west in the vicinity of the ACS facility. At the ACS Site, the flow is diverted to the north and to the south by the barrier wall, installed as part of the ACS remedy. The potentiometric surface to the northwest of the Site (including the wetland area) is relatively flat due to the effects of the Perimeter Groundwater Containment (PGCS) Trench, barrier wall, and discharge points from the groundwater treatment plant effluent. Depressed water levels in the Town of Griffith Landfill reflect the activity of their leachate collection system (LCS).

Horizontal groundwater flow in the lower aquifer is northward with a hydraulic gradient of 0.00035. This gradient is consistent with previous lower aquifer data presented in earlier groundwater technical memoranda.

Vertical gradients were calculated across three aquifer horizons: 1) the upper aquifer in the wetland area, 2) the upper and lower aquifers, and 3) the lower aquifer. All gradients were consistent with previous findings. Vertical gradients measured in the wetland area were very small and were generally upwards, except for a small downward gradient near the southern edge of the wetlands. Downward vertical gradients were measured between the upper and lower aquifer. Vertical gradients measured in the lower aquifer were small and variable; of the calculated gradients in the lower aquifer, four were downward, seven were upward, and two were within the margin of potential error in water level measurement. Consistent vertical gradient trends are seen in three well nests in the lower aquifer: downward at MW52/MW53 and MW54R/MW55, and upward at MW28/PZ43. This

EXECUTIVE SUMMARY

variability indicates that there is not an overall trend in vertical gradient data in the lower aquifer.

For discussion purposes, the upper aquifer flow system was divided into three regions for analysis: the North Area, South Area, and the Griffith Landfill. The North Area extends northward from the north end of the Site near the On-Site Containment Area and west/northwest into the wetlands, and the South Area extends southeasterly from the barrier wall at the southern end of the Off-Site Area.

Groundwater sampling within the shallow aquifer during the September 1999 event was limited to monitoring wells MW48 and MW49 in the North Area. Chloroethane and benzene continue to be detected in MW48 and MW49 within the range of previous detections, but have been showing decreasing trends. Detection of VOCs and inorganics were compared to the maximum baseline concentrations for each well. There were no VOC baseline exceedances in September samples from either of these wells. There were also no exceedances for arsenic or lead in these wells.

Two lower aquifer monitoring wells, MW9R and MW10C, were sampled during September 1999. Chloroethane and benzene continue to be detected in MW9R and MW10C with concentrations within the range of previous detections. The downward trend in benzene concentration since monitoring well MW9 was replaced appears to be continuing. Detection of VOCs and inorganics were compared to the maximum baseline concentration for each well. There were no VOC exceedances in either monitoring wells. There were also no exceedances for arsenic or lead in MW9R.

In accordance with the approved long term monitoring plan, five private wells were sampled for TCL organic compounds (VOCs, semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs)). No TCL SVOCs, PCBs were detected in any of the private wells. A few VOCs and pesticides were detected, but all at either estimated concentrations below the detection limit, or were also detected in the laboratory blank. Inorganic analytes were detected in the private well samples. Lead was detected in private well PW-D at 39.8 ug/L, which exceeds the maximum contaminant level (MCL) of 15 ug/L. This well was previously sampled during September 1998, and lead was not detected. All other detected analytes were below the MCLs during the September 1999 sampling event.

A separate report will be submitted that includes a discussion and data evaluation for the groundwater treatment system effluent samples

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION.....	1
1.1 LONG TERM GROUNDWATER MONITORING PLAN	1
1.2 OBJECTIVES AND SCOPE OF SEPTEMBER 1999 SAMPLING	1
1.3 ORGANIZATION OF TECHNICAL MEMORANDUM	2
2.0 FIELD DATA COLLECTION ACTIVITIES SEPTEMBER 1999	3
2.1 WATER LEVELS.....	3
2.2 GROUNDWATER SAMPLING	3
3.0 EVALUATION OF SEPTEMBER 1999 SAMPLING DATA	5
3.1 GROUNDWATER FLOW SYSTEM DATA	5
3.1.1 Groundwater Flow in the Upper Aquifer	5
3.1.2 Vertical Gradients in the Upper Aquifer	5
3.1.3 Groundwater Flow in the Lower Aquifer.....	6
3.1.4 Vertical Gradients in the Lower Aquifer.....	6
3.1.5 Vertical Gradient Between Upper and Lower Aquifer	7
3.2 MONITORING WELL SAMPLE DATA	8
3.2.1 Groundwater Sampling Results in the Upper Aquifer	8
3.2.1.1 VOCs.....	8
3.2.1.2 SVOCs	9
3.2.1.3 Pesticides and PCBs.....	9
3.2.1.4 Tentatively Identified Compounds (TICS)	9
3.2.2 Groundwater Sampling Results from the Lower Aquifer	9
3.2.2.1 VOCs.....	9
3.2.2.2 SVOCs	10
3.2.2.3 Pesticides and PCBs.....	10
3.2.2.4 Tentatively Identified Compounds (TICS)	10
3.2.3 Inorganic Chemical Species	10
3.3 PRIVATE WELL SAMPLING	11
4.0 SUMMARY AND CONCLUSIONS	11
4.1 SUMMARY OF GROUNDWATER FLOW SYSTEMS	12
4.2 SUMMARY OF MONITORING WELL SAMPLE DATA	12
4.3 SUMMARY OF PRIVATE WELL SAMPLE DATA	12

LIST OF TABLES

Table 1	Groundwater Level Gauging Points – September 1999
Table 2	Upper Aquifer Wells Sampled – September 1999
Table 3	Lower Aquifer Wells Sampled – September 1999
Table 4	Residential Wells Sampled – September 1999
Table 5	Summary of Field Parameter Results – September 1999
Table 6	Vertical Gradients in Wetlands Upper Aquifer – September 1999

Table 7	Vertical Gradients in Lower Aquifer – September 1999
Table 8	Vertical Gradients Between Upper and Lower Aquifers – September 1999
Table 9	Summary of Organic Compound Detections in the Upper Aquifer Validated Results – September 1999
Table 10	Summary of Organic Compound Detections in the Lower Aquifer Validated Results – September 1999
Table 11	Comparison of Private Well Detections to MCLs – September 1999

LIST OF FIGURES

Figure 1	Upper Aquifer Water Table Map – September 1999
Figure 2	Lower Aquifer Potentiometric Surface – September 1999
Figure 3	VOCs Detected in Upper Aquifer Monitoring Wells – September 1999
Figure 4	VOCs Detected in Lower Aquifer Monitoring Wells – September 1999
Figure 5	Residential Well Locations

LIST OF APPENDICES

Appendix A	Comparison of September 1999 Results to Baseline Maximum Concentrations
Appendix B	Time Trend Plots
Appendix C	Validation Narrative and Laboratory Reports from Upper Aquifer
Appendix D	Validation Narrative and Laboratory Reports from Lower Aquifer
Appendix E	Validation Narrative and Laboratory Reports from Residential Wells

1.0 INTRODUCTION

1.1 LONG TERM GROUNDWATER MONITORING PLAN

The long-term groundwater monitoring plan, approved by U.S. Environmental Protection Agency (U.S. EPA) in September 1997, for the American Chemical Service, Inc. (ACS) National Priorities List (NPL) Site in Griffith, Indiana, consists of two major (semi-annual) sampling events each year and two minor sampling events. The major sampling events consist of sample collection at 44 monitoring wells in the monitoring network. For one of the semi-annual sampling events, the groundwater samples are analyzed for full scan Target Compound List and Target Analyte List (TCL/TAL) parameters. For the other semi-annual sampling event, the samples are analyzed for a reduced list of indicator parameters. The indicator parameters are tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), 1,1-dichloroethene (DCE), 1,2-dichloroethene (1,2-DCE), vinyl chloride (VC), chloroethane, benzene, arsenic, and lead.

The minor sampling events consist of sampling three monitoring wells within the monitoring network, which have shown variable contaminant concentrations during the baseline sampling. These include upper aquifer monitoring wells MW48 and MW49, and lower aquifer monitoring well MW9R. Samples from these monitoring wells are analyzed for indicator parameters. Monitoring well MW9R has been analyzed for full scan TCL/TAL compound list during the minor sampling events in the past, but during 1999 and 2000, it will be analyzed for the same compound list as monitoring wells MW48 and MW49, in accordance with the U.S. EPA Letter dated June 15, 1998.

During each sampling event, water levels are collected from the full monitoring network prior to collecting groundwater samples. These measurements are conducted within a 24-hour period.

Once annually, samples are to be collected from five private wells and analyzed for the full scan TCL/TAL parameters.

1.2 OBJECTIVES AND SCOPE OF SEPTEMBER 1999 SAMPLING

The September 1999 sampling combined a minor sampling event (three monitoring wells) with the sampling of five residential wells. In addition, one additional lower aquifer monitoring well, MW10C, was sampled for indicator volatile organic compounds (VOCs), because of a baseline exceedance of benzene during the June 1999 quarterly sampling event.

The following objectives from the long term groundwater monitoring plan apply to the quarterly sampling at the ACS NPL Site.

1. Collect water level data to monitor groundwater flow in the upper and lower aquifers and calculate the hydraulic gradients between the aquifers.
2. Collect water level data to document the performance of the Perimeter Groundwater Containment System (PGCS) and barrier wall extraction system (BWES) and to evaluate changes in the groundwater flow system resulting from the remedial actions (these activities are outlined in the Performance Standard Verification Plan, April 1997). The Groundwater Treatment Plant Quarterly Monitoring Report is submitted under separate cover and includes information on this objective.
3. Collect and analyze groundwater samples from the interior of the areas of contaminated groundwater to document how concentrations change with time and in response to the remedial actions.
4. Assess progress toward attaining cleanup objectives in contaminated areas.

1.3 ORGANIZATION OF TECHNICAL MEMORANDUM

The results of the September 1999 groundwater monitoring activities at the ACS NPL Site are presented in the following sections of this report:

- Section 1 Objectives and scope of the groundwater monitoring activities
- Section 2 Field data collection activities
- Section 3 Evaluation of the September 1999 sampling data
- Section 4 Summary and Conclusions

Tables, figures and appendices are presented at the end of this report.

A baseline sampling report was completed following the September 1997 sampling event and included a long-term Groundwater Monitoring Plan. In accordance with the U.S. EPA-approved Groundwater Monitoring Plan, this Technical Memorandum compares the September 1999 groundwater analytical results to the highest detected concentrations observed for each well and parameter during the baseline sampling. This comparison table is found in Appendix A.

2.0 FIELD DATA COLLECTION ACTIVITIES SEPTEMBER 1999

Field activities were conducted from September 13 through September 15, 1999 at the ACS Site. The groundwater monitoring activities were conducted in accordance with the U.S. EPA-approved Specific Operating Procedures (SOPs), the draft Quality Assurance Project Plan (QAPP), and U.S. EPA comments regarding the draft QAPP. The September 1999 groundwater sampling event consisted of the following activities:

- Measurement of water levels in 149 upper and lower aquifer wells, piezometers, and staff gauges on September 13, 1999.
- Upper aquifer monitoring: collection of groundwater samples from two monitoring wells screened in the upper aquifer and analysis for indicator parameters; Samples were collected on September 15, 1999.
- Lower aquifer monitoring: collection of groundwater samples from two monitoring wells screened in the lower aquifer and analysis for indicator parameters; Samples were collected on September 15, 1999.
- Collection of groundwater samples from five residential wells on September 14, 1999 and analysis for TCL and TAL parameters.

2.1 WATER LEVELS

Water level measurements were collected at upper and lower aquifer wells, piezometers, and surface water staff gauges on September 13, 1999. The water level measurements were utilized to determine groundwater flow directions in the upper and lower aquifers, and to calculate vertical gradients both within and between the aquifers. Table 1 contains water level measurements, map coordinates (reference points), top of inside well casing elevations, and calculated groundwater elevations for the measurement points.

2.2 GROUNDWATER SAMPLING

The groundwater samples for the September 1999 event were sent overnight under chain-of-custody to CompuChem Laboratory, Cary, North Carolina, where they were analyzed for the parameters summarized in Tables 2, 3, and 4. The tables summarize well identification, well screen depth (lower aquifer only), area of groundwater contamination, location with respect to area of groundwater contamination, and monitoring parameters.

Prior to sampling the monitoring wells, each well was purged using low-flow methods in accordance with the U.S. EPA approved Monitoring Well Sampling SOP of the Upper Aquifer Investigation (revision: March 21, 1997). Prior to sampling the residential wells, the residential wells were purged in accordance with the U.S. EPA approved September 1997 Groundwater Monitoring Plan. Field parameters (pH, specific conductivity, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity) were measured and recorded during well purging activities. Table 5 presents a summary of the field parameter results.

3.0 EVALUATION OF SEPTEMBER 1999 SAMPLING DATA

3.1 GROUNDWATER FLOW SYSTEM DATA

Water table and potentiometric surface maps were developed for the upper and lower aquifers and the overall horizontal hydraulic gradient was calculated for the lower aquifer. Vertical hydraulic gradients were calculated across three aquifer horizons: 1) within the upper aquifer in the wetland area, 2) within the lower aquifer, and 3) between the upper and lower aquifers. The following sections present and discuss the general flow directions in the upper and lower aquifers and the calculated gradients.

Vertical hydraulic gradients were calculated for both the upper and lower aquifers using water level measurement data from adjacent wells and piezometers screened at different depths within each aquifer.

3.1.1 Groundwater Flow in the Upper Aquifer

The upper aquifer matrix is homogeneous silty sand with no evidence of interlayering or bedding complexities. Many years of groundwater flow monitoring have shown that the natural regional groundwater flow in this aquifer is westward. The barrier wall has affected the groundwater flow by diverting it to the north-northwest and to the south-southeast.

Figure 1 presents the upper aquifer water table elevations from data collected on September 13, 1999. Due to the large number of data points (8 staff gauges, 31 wells, and more than 100 piezometers), little interpolation was required to develop detailed contour plots. Since the Remedial Investigation in 1991, all water table maps developed for the ACS Site have consistently shown the same general groundwater flow patterns. The potentiometric surface to the northwest of the site is relatively flat due to the affects of the PGCS trench, barrier wall, and discharge points from the groundwater treatment plant. Southwest of the Site, the water levels are depressed due to the effects of the Town of Griffith Landfill's leachate collection system.

3.1.2 Vertical Gradients in the Upper Aquifer

Table 6 shows the upper aquifer vertical gradient calculations based on the September 1999 water level measurements. These are shown in their historical context in the tabulation below:

Piezometer Nest	June 1997	Sept 1997	Dec 1997	June 1998	Sept 1998	Nov 1998	March 1999	June 1999	Sept 1999
P64/P65	-0.062	0.022	0.016	0.020	0.016	0.016	0.018	0.014	0.010
P66/P67	0.013	0.007	0.002	0.005	0.004	0.003	WU	0.006	-0.010
P68/P69	0.002	0.003	0.007	0.003	0.005	WU	0.005	0.012	0.010
P70/P71	0.042	0.035	0.037	0.023	0.057	0.073	0.040	0.042	0.055

Notes:

WU= Within uncertainty of measurement technique.

Negative value indicates downward gradient.

As in the past, the vertical gradients in the upper aquifer were calculated by dividing the difference in head between nested piezometers by the vertical distance between screen midpoints. The vertical gradients are generally small and upward, which is the typical occurrence in a wetland area where groundwater discharges to the surface. The only difference from previous events is the downward gradient measured at P68/P69, near the southern edge of the wetlands.

3.1.3 Groundwater Flow in the Lower Aquifer

The lower aquifer groundwater elevations listed in Table 1 were used to develop a potentiometric surface map for the lower aquifer (Figure 2). The groundwater flow in the lower aquifer is northward, consistent with historical groundwater data. The horizontal hydraulic gradient in the lower aquifer was calculated using the measured difference in head between MW50, located south of the Site, and MW52, located northwest of the Site in the wetlands. This difference, 0.86 feet on September 13, 1999, was divided by the lateral distance between the two wells (2,429 feet). Based on this calculation, the horizontal hydraulic gradient in the lower aquifer is 0.00035. This is consistent with the relatively low gradients historically calculated for the lower aquifer, as summarized below.

Report of Hydraulic Gradient in Lower Aquifer		Horizontal Hydraulic Gradient
Technical Memorandum	(October 1995)	0.00041
Lower Aquifer Tech Memo	(September 1996)	0.00047
Groundwater Monitoring Report	(August 1996)	0.00047
Groundwater Monitoring Report	(November 1996)	0.00049
Groundwater Monitoring Report	(March 1997)	0.00040
Groundwater Monitoring Report	(June 1997)	0.00044
Groundwater Monitoring Report	(September 1997)	0.00035
Groundwater Monitoring Report	(December 1997)	0.00039
Groundwater Monitoring Report	(June 1998)	0.00042
Groundwater Monitoring Report	(September 1998)	0.00029
Groundwater Monitoring Report	(December 1998)	0.00024
Groundwater Monitoring Report	(March 1999)	0.00033
Groundwater Monitoring Report	(June 1999)	0.00038
September 1999 Groundwater Monitoring Report		0.00035

3.1.4 Vertical Gradients in the Lower Aquifer

Seven nested well sets are screened in the lower aquifer. At each location, there are two or three monitoring wells and/or piezometers, each screened at a different depth within the lower aquifer. The depth intervals include the upper portion, the middle portion, and the lower portion.

The water levels measured in each of these wells (Table 1) were used to calculate vertical hydraulic gradients in the lower aquifer at each location. Table 7 summarizes the calculated vertical gradients. Calculated vertical gradients from September 1999 are shown in their historical context in the following tabulation:

Well/Piezometer Nest	Sept 1997	Dec 1997	June 1998	Sept 1998	Nov 1998	Mar 1999	June 1999	Sept 1999
MW7/PZ44	WU	-0.0005	WU	NA	WU	WU	WU	-0.0016
MW8/MW32	NA	WU	WU	WU	-0.0033	0.0011	-0.0007	0.0227
MW9R/MW34	WU	WU	NA	WU	0.0006	WU	0.0037	0.0040
MW30/MW33	WU	-0.0040	NA	NA	WU	WU	-0.0058	WU
MW28/PZ43	WU	WU	0.0021	0.0045	0.0008	0.0011	0.0025	0.0140
MW52/MW53	-0.0004	-0.0008	-0.001	-0.0006	-0.0008	-0.0012	-0.0008	-0.0002
MW54R/MW55	WU	-0.0012	NA	NA	NA	-0.0069	-0.0077	-0.0071

Notes

WU= Within uncertainty of measurement technique.

NA = A water elevation necessary for the calculation was not available.

Negative value indicates downward gradient.

Of the calculated vertical gradients across the lower aquifer, four were downward, seven were upward, and two were within the uncertainty of the measurement technique. Consistent downward vertical gradients are observed at well nests MW52/MW53 and MW54R/MW55, and consistent upward vertical gradients are observed at well nest MW28/PZ43. The small and variable gradients indicate that there is not an overall trend in vertical gradient within the lower aquifer.

3.1.5 Vertical Gradient Between Upper and Lower Aquifer

Groundwater elevations from upper and lower aquifer monitoring points were utilized to calculate the vertical hydraulic gradient between the two aquifers at three locations (P28/MW8, P27/MW9R, and P8/MW7). These are summarized in Table 8. The gradients are consistent with previous findings. Vertical gradients were calculated by dividing the difference in head between the upper and lower aquifer wells by the thickness of the clay-confining layer between the two wells. The results show that there is a relatively strong downward gradient from the upper aquifer to the lower aquifer. This is because the majority of head drop occurs across the low permeability clay layer. The average groundwater elevations in the upper and lower aquifers, respectively, are approximately 631 and 623 feet above mean sea level (amsl). The confining clay layer between the upper and lower aquifer varies in thickness from greater than 30 feet in the south to less than 5 feet in the wetland to the northwest (MW10C area). Therefore, the variability in calculated downward gradients is due to the variable thickness of the clay confining layer rather than the difference in head between the upper and lower aquifer.

3.2 MONITORING WELL SAMPLE DATA

Groundwater samples were analyzed for indicator parameters (PCE, TCE, TCA, DCE, 1,2-DCE, VC, chloroethane, benzene, arsenic, and lead). The laboratory results were validated in accordance with U.S. EPA Region V guidelines, *U.S. EPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (2/94)* and *Inorganic Data Review (2/94)*. Evaluation of the data is discussed in Section 4.0. Validation narratives and laboratory analytical reports for samples from the upper aquifer and the lower aquifer are provided in Appendices C and D, respectively.

The analytical results for the September 1999 quarterly sampling were evaluated for evidence of contaminant migration, changes in contaminant concentrations over time in response to remedial actions, and the presence of contaminants in the lower aquifer. Time trend plots for monitoring wells MW48, MW49, MW9R, and MW10C are presented in Appendix B. The following sections summarize the results of the organic analyses in the upper aquifer (Section 3.2.1), the organic analyses in the lower aquifer (Section 3.2.2), and the inorganic analyses in both aquifers (Section 3.2.3).

3.2.1 Groundwater Sampling Results in the Upper Aquifer

The ACS Site, except for the wetlands, has been identified as the source of groundwater contamination in the upper aquifer. The Site source areas are currently contained within the barrier wall, which prevents future migration of contaminants to the adjacent areas. Because the source is contained, the groundwater monitoring program is focused on the adjacent areas not confined by the barrier wall. These surrounding areas are: the areas north and west of the ACS Facility, referred to as the North Area; the area south/southeast of Colfax Avenue, referred to as the South Area; and the Town of Griffith Landfill, which covers the area to the southwest of the ACS Site.

Table 9 and Figure 3 present a summary of TCL organic compounds detected in groundwater samples collected from wells in these areas during the September 1999 sampling event.

3.2.1.1 VOCs

Figure 3 shows the location of VOC detections in the upper aquifer. The contamination in the North Area is comprised of chloroethane and benzene. No other VOCs were detected during this sampling event. None of the VOC concentrations exceeded maximum baseline concentrations (Appendix A).

Chloroethane and benzene continue to be detected in MW48 and MW49, with concentrations within the range of previous detections. Concentrations of benzene and chloroethane have decreased slightly in MW48 and MW49 since June 1999. Time trend plots for these compounds are found in Appendix B. The VOC concentrations in September 1999 do not exceed maximum baseline concentrations. The following table summarized historical chloroethane and benzene detections in MW48 and MW49:

Monitoring Wells MW48 and MW49 (Upper Aquifer)

Monitoring Well	MW48		MW49	
Sampling Date	Benzene	Chloroethane	Benzene	Chloroethane
Baseline Value	9,500	1,000	6,750	715
August 1996	9,100	1,000	5,000	480
March 1997	5,200	620	1,600	310
June 1997	7,700	670	4,800	540
September 1997	9,500	980	8,200	810
December 1997	3,800	300	3,300	250
June 1998	9,500	720	4,500	450
September 1998	7,800	610	4,700	650
December 1998	5,500	420	4,200	440
March 1999	1,900	83	1,900	180
June 1999	5,700	290	2,600	220
September 1999	5,400	290	2,200	210

Note:

All concentrations in ug/L.

3.2.1.2 SVOCs

Semivolatile organic compounds (SVOCs) were not analyzed as part of the September 1999 groundwater monitoring activities within the upper aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.1.3 Pesticides and PCBs

Pesticides and polychlorinated biphenyls (PCBs) were not analyzed as part of the September 1999 groundwater monitoring activities within the upper aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.1.4 Tentatively Identified Compounds (TICS)

Two tentatively identified compounds (TICS) were detected in upper aquifer monitoring well MW48. None were detected in MW49. One TIC, 3,3,5-trimethylcyclohexanone, has been reported in previous sampling events in both monitoring wells. It was detected during the September 1999 sampling event in MW48 at 19 µg/L (NJ/). The complete listing of TICs is compiled in Appendix C along with the analytical results.

3.2.2 Groundwater Sampling Results from the Lower Aquifer

Table 10 presents a summary of TCL organic compounds detected in groundwater samples collected from lower aquifer monitoring wells MW9R and MW10C during the September 1999 sampling event.

3.2.2.1 VOCs

Chloroethane and benzene were detected in MW9R and MW10C at concentrations within the range of previous detections for MW9/MW9R and MW10C. No VOCs exceeded baseline concentrations in the lower aquifer wells in the September 1999 sampling event.

In MW9R, benzene concentrations decreased slightly since the June 1999 sampling event, while chloroethane concentrations increased slightly. A time trend plot for these compounds is found in Appendix B. The following tabulation shows the concentration of benzene has decreased with the installation of MW9R.

MW9/ MW9R	Jan 1991	Jan 1995	Nov 1996	Mar 1997	Jun 1997	Sept 1997	Dec 1997	Jun* 1998	Sept* 1998	Dec* 1998	Mar* 1999	Jun* 1999	Sept* 1999
Benzene (µg/L)	<5	40	310	310	280	290	260	110	100	160	130	160	120

*sample collected from replacement well MW9R

In June 1999, benzene and chloroethane were detected in MW10C at concentrations two orders of magnitude greater than in March 1999. This monitoring well was resampled in September 1999 in order to confirm these results. This resampling showed a return to magnitude concentrations seen in previous sampling rounds. This well will continue to be monitored in order to verify that concentrations are not increasing. A time trend plot for these compounds is included in Appendix B.

3.2.2.2 SVOCs

SVOCs were not analyzed as part of the September 1999 groundwater monitoring activities within the lower aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.2.3 Pesticides and PCBs

Pesticides or PCBs were not analyzed as part of the September 1999 groundwater monitoring activities within the lower aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.2.4 Tentatively Identified Compounds (TICS)

TICs were detected in both monitoring wells sampled from the lower aquifer during the September 1999 sampling event. Five TICS were detected in MW09R and two were detected in MW10C. Ether and ether-related TICs were detected in both lower aquifer wells. The concentration of ether in MW10C was 1,500 ug/L. 3,3,5-trimethylcyclohexanone, which has also been detected in upper aquifer wells, was detected in MW09R.

3.2.3 Inorganic Chemical Species

The September 1999 inorganic results are compiled in Appendix A along with the maximum baseline concentrations. None of the monitoring wells had exceedances of baseline concentrations during this event.

3.3 PRIVATE WELL SAMPLING

Five private wells, each screened in the lower aquifer, were sampled during the September 1999 groundwater sampling event. These included the following:

<u>Well Identifier</u>	<u>Street Address</u>
PW-Y	1002 Reder Road
PW-A	1007 Reder Road
PW-B	1009 Reder Road
PW-C	1029 Reder Road
PW-D	1033 Reder Road

The well locations are shown on Figure 5. Each well was sampled following the approved private well sampling protocol, and the samples were analyzed for full scan TCL/TAL parameters.

No TCL organic compounds for SVOCs and PCBs were detected in samples from the private wells. A few VOCs and pesticides were detected at very low concentrations in samples from the private wells. Methylene chloride was detected in all five private well samples. In samples from wells PW-A, PW-B, and PW-C, it was detected in the laboratory blank and listed as an estimated concentration. Toluene was detected in samples from residential wells PW-B and PW-D at very low, estimated concentrations. Five pesticides were detected in samples from wells PW-A (alpha chlordane), PW-B (Endrin aldehyde, heptachlor epoxide), PW-D (4,4'-DDE), and PW-Y (alpha BHC). These pesticides are all estimated concentrations. Since the concentrations of pesticides and VOC compounds detected in the samples from the residential wells are extremely low and not commonly detected in previous events, Montgomery Watson believes that they are probably lab related.

Several inorganic analytes were detected in the private well samples. Lead was detected at a concentration of 39.8 ug/L in private well PW-D, which exceeds the maximum contaminant level (MCL) for lead (15 ug/L). (MCLs are the maximum permissible level of a contaminant in water, which is delivered to any user of a public water system.) During the previous residential well sampling event (September 1998), lead was not detected in the sample from well PW-D. No other analyte exceeded their respective MCLs. Table 12 summarizes the detected inorganic analytes and corresponding MCLs.

Montgomery Watson can provide analytical data so that the EPA can notify the resident at 1033 Reder Rd. (Well PW-D) of the lead exceedance. Montgomery Watson believes that the lead contamination is from lead plumbing pipes, rather from contamination from the ACS Site.

4.0 SUMMARY AND CONCLUSIONS

4.1 SUMMARY OF GROUNDWATER FLOW SYSTEMS

Analysis of the groundwater flow systems for both the upper and lower aquifers were found to be consistent with those in previous monitoring events. There were no significant changes or deviations from the baseline groundwater flow system. Groundwater flow within the upper aquifer is from the east and is diverted by the barrier wall toward the north/northwest and south/southwest around the ACS Site. Consistent with historical data, the groundwater flow within the lower aquifer is northward. Vertical gradients within the upper aquifer in the wetlands are generally upwards. Vertical gradients measured within the lower aquifer were either small or variable, and vertical gradients between the upper and lower aquifers were downward as in the past.

4.2 SUMMARY OF MONITORING WELL SAMPLE DATA

VOCs were detected in all four monitoring well samples collected from both the upper and lower aquifers. No VOCs exceeded baseline concentrations within the upper and lower aquifers.

SVOCs were not analyzed in the upper and lower aquifer samples.

Pesticides and PCBs were not analyzed in the upper and lower aquifer samples.

Inorganic compounds were detected in both the upper and lower aquifer samples. None of the inorganic compounds exceeded baseline concentrations.

In the upper aquifer monitoring wells, two TICS were detected in monitoring well MW48, and no TICS were detected in monitoring well MW49. In the lower aquifer monitoring wells, five TICS were detected in monitoring well MW9R, and two TICs were detected in MW10C.

4.3 SUMMARY OF PRIVATE WELL SAMPLE DATA

Two VOCs and five pesticides were detected in the private wells. No SVOCs or PCBs were detected in any of the private wells. Several naturally occurring inorganic analytes were detected in the private well samples; lead exceeded the corresponding maximum contaminant level (MCL) in PW-D.

4.4 CONCLUSIONS

The following conclusions can be drawn for each objective of the Groundwater Monitoring Plan.

Objective 1 was to collect water level data to monitor groundwater flow in the upper and lower aquifers and calculate the hydraulic gradients between the aquifers. The data collected indicates that groundwater flow directions and groundwater gradients for the September 1999 sampling event are consistent with past conditions for both the upper and lower aquifers.

Objective 2 was to collect water level data to document the performance of the PGCS and BWES and to evaluate changes in the groundwater flow system resulting from the remedial actions. The data indicate the barrier wall is containing the groundwater enclosed within the wall. In general, groundwater flow from the east is diverted toward the north/northwest and south/southeast. The groundwater diverted north/northwest is either collected in the PGCS extraction trench or discharged to the drainage ditch (just beyond MW48). Groundwater diverted south/southwest flows around the barrier wall towards the southwest. These observations are consistent with previous observations.

Objective 3 was to collect and analyze groundwater samples from the interior of the areas of contaminated groundwater to document how concentrations change with time and in response to the remedial actions. Analytical results for samples collected from inside the contaminated areas do not indicate any exceedance of baseline concentrations for organic compounds in both the upper and lower aquifers.

Objective 4 was to assess progress toward attaining cleanup objectives in the contaminated areas. Concentrations of benzene and chloroethane in MW48 and MW49 have decreased over the past several monitoring events, and may be related to oxygen release compound (ORC[®]) injection and fluctuation in groundwater flow in that area.

CAS/cas/PJV/JMS/CAS/emp/CAS
J:\1252\042\September 99 report\125204222b10.doc
1252042.221601



Table 1
Groundwater Level Gauging Points - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Lower Aquifer Wells and Piezometers

Well Designation	Reference Points			9/13/99		Notes
	East	North	TOIC	Level	Elevation	
MW28	5657	5696	648.77	28.92	619.85	
PZ42	5662	5696	648.44	28.80	619.64	
PZ43	5662	5702	648.69	28.50	620.19	
MW50	5269	5383	649.43	29.50	619.93	
PZ44	6170	6766	638.47	19.10	619.37	
MW7	6113	6732	641.46	22.07	619.39	
MW10C	5229	7554	637.45	18.14	619.31	
MW9R	4893	6990	639.05	19.73	619.32	
MW29	4886	7012	638.06	18.59	619.47	
MW34	4880	7002	638.14	18.63	619.51	
MW23	4717	7404	633.31	13.91	619.40	
MW24	4596	8033	635.22	16.16	619.06	
MW52	4996	7814	632.74	13.67	619.07	
MW53	4977	7833	632.87	13.81	619.06	
MW51	5198	7767	634.16	15.21	618.95	
MW30	5194	7774	634.25	15.30	618.95	
MW33	5189	7774	634.13	15.17	618.96	No plug
MW54R	5590	7592	637.51	18.23	619.28	
MW55	5595	7604	636.63	17.71	618.92	
MW8	5934	7506	640.43	22.31	618.12	Measured: 12.31 - corrected: 22.31
MW31	5907	7505	641.64	22.56	619.08	
MW32	5902	7507	641.84	22.68	619.16	
M4D	4949	6538	633.32	13.82	619.50	
ATMW4D	5297	7311	637.99	NM	NM	Hornets - did not spray because well is sampled

Table 1
Groundwater Level Gauging Points - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Upper Aquifer Wells

Well Designation	Reference Points			Date: 9/13/99		Notes
	East	North	TOIC	level	Elevation	
MW6	5298	5520	655.28	24.50	630.78	
MW11	6377	7329	640.47	9.85	630.62	
MW12	6019	6352	642.74	11.21	631.53	
MW13	5050	7814	634.08	6.45	627.63	
MW14	4882	6995	638.56	12.99	625.57	
MW15	4721	5003	637.89	8.02	629.87	
MW18	5836	5746	644.89	11.06	633.83	
MW19	5231	4943	635.78	5.88	629.90	
MW37	5395	7976	636.78	8.58	628.20	
MW38	5903	8216	636.51	8.66	627.85	
MW39	6253	7947	637.77	8.38	629.39	
MW40	6349	6831	639.46	8.01	631.45	
MW41	6242	4517	632.74	14.58	618.16	
MW42	6264	3808	632.32	NM	NM	Could not find
MW43	5880	3719	633.56	9.73	623.83	
MW44	5390	4303	633.04	6.50	626.54	
MW45	5830	4388	635.35	7.72	627.63	
MW46	4526	7424	633.32	5.79	627.53	
MW47	5958	5084	640.54	9.30	631.24	
MW48	5669	7814	636.36	8.05	628.31	
MW49	5551	7650	637.00	8.94	628.06	
M1S	4362	5743	639.09	9.91	629.18	Griffith Landfill Wells
M4S	4953	6537	633.42	8.34	625.08	Griffith Landfill Wells

Staff Gauges

Well Designation	Reference Points			9/13/99		Notes
	East	North	TOSG	level	Elevation	
SG2	4423	6864	622.84	NM	NM	Dry
SG7	5403	6889	637.01	3.20	633.81	
SG8R	5409	5252	634.70	4.20	630.50	Approximate value - no water
SG1	5023	6196	633.50	NM	NM	Covered by sediment
SG3	4180	7123	631.17	NM	NM	Dry
SG5	5464	7713	633.36	NM	NM	Dry
SG6	4495	8075	632.97	NM	NM	Dry
SG11	5859	8245	634.62	NM	NM	Dry
SG12	5596	7867	634.12	NM	NM	Dry

Table 1
Groundwater Level Gauging Points - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Piezometers

Well Designation	Reference Points			9/13/99		Notes
	East	North	TOC	level	Elevation	
LW1	4807	5070	644.57	14.37	630.20	
LW2	4662	5465	649.70	19.21	630.49	
P3	5453	6470	639.87	5.25	634.62	
P4	5432	6228	639.25	NM	NM	Destroyed
P5	5285	6510	636.70	2.52	634.18	
P6	5150	6551	638.75	NM	NM	Destroyed
P7	5950	6630	643.63	12.19	631.44	
P8	6156	6734	639.27	8.04	631.23	
P9	6134	6994	638.88	7.91	630.97	
P10	5413	5852	649.32	NM	NM	Inconsistent construction
P11	5199	5900	649.14	14.30	634.84	
P12	5076	5723	650.08	NM	NM	Destroyed
P13	4878	5735	651.20	19.90	631.30	
P15	5003	6187	639.93	10.83	629.10	
P16	4673	5749	648.80	17.08	631.72	
P17	4584	6006	654.64	23.22	631.42	Inside Griffith Landfill
P18	4623	6224	649.84	3.00	646.84	Inside Griffith Landfill / Standing water around well.
P22	4636	6732	634.30	9.04	625.26	
P23	4689	7018	636.18	10.78	625.40	
P24	5002	7178	636.06	NM	NM	Dry; total depth = 9.70
P25	5131	7510	635.01	8.49	626.52	
P26	4764	7309	634.23	7.76	626.47	
P27	4904	7020	639.70	NM	NM	Dry; total depth = 13.59
P28	5883	7486	644.53	14.46	630.07	
P29	5738	6619	642.37	7.67	634.70	
P30	5626	6793	642.42	NM	NM	Destroyed
P31	5480	7159	641.03	4.90	636.13	
P32	5746	7026	642.32	7.68	634.64	
P35	5515	6572	641.44	NM	NM	Destroyed
P36	5410	6851	645.89	11.10	634.79	
P37	5330	6949	641.37	NM	NM	Destroyed
P38	5149	6992	639.87	NM	NM	Destroyed
P39	5940	6902	642.00	7.35	634.65	
P40	5931	7241	638.77	7.87	630.90	
P41	5663	7377	637.23	7.11	630.12	
P49	5145	6949	638.98	4.60	634.38	
P50	5129	6964	639.59	NM	NM	Destroyed
P51	3876	6859	635.07	9.32	625.75	Will not be able to take a reading in wet season
P52	4100	7845	636.66	10.04	626.62	Shot with BB gun.
P53	4597	8015	636.18	8.37	627.81	
P54	4936	8081	638.28	9.94	628.34	
P55	5628	7979	636.08	8.59	627.49	
P56	6405	7665	639.46	8.98	630.48	
P59	6389	6590	639.22	8.10	631.12	
P60	6111	6051	640.23	8.50	631.73	
P61	5533	5284	638.58	8.36	630.22	
P62	5665	4945	637.06	7.50	629.56	
P63	5483	7689	637.70	8.94	628.76	
EW1	5113	6942	639.50	NM	NM	Destroyed
P64	4617	7065	634.87	9.28	625.59	No plug
P65	4615	7063	634.77	9.13	625.64	
P66	4729	7034	636.02	10.70	625.32	
P67	4732	7034	636.06	10.82	625.24	
P68	4743	7752	634.48	5.60	628.88	
P69	4741	7751	634.66	5.72	628.94	
P70	4880	7680	635.38	7.38	628.00	No plug
P71	4876	7682	635.32	6.99	628.33	No plug

Table 1
Groundwater Level Gauging Points - September 1999
American Chemical Service NPL Site
Griffith, Indiana

New Piezometers - Upper Aquifer

Well Designation	Reference Points			9/13/99		Notes
	East	North	TOC	level	Elevation	
PGCS Piezometer Sets						
P81	5577	7581	636.19	8.63	627.56	
P82	5577	7572	635.77	8.55	627.22	
P83	5577	7562	635.95	8.78	627.17	
P84	5322	7603	634.35	7.41	626.94	
P85	5326	7594	634.08	7.06	627.02	
P86	5329	7585	634.41	7.49	626.92	
P87	5121	7466	633.88	7.46	626.42	
P88	5130	7460	633.90	7.51	626.39	
P89	5137	7454	634.02	7.57	626.45	
P90	4881	7152	632.59	8.49	624.10	
P91	4889	7145	632.97	9.97	623.00	Stick-up box damaged; should be replaced.
P92	4896	7138	633.63	9.62	624.01	
BWES Piezometer Pairs						
P93	5136	7067	638.79	10.49	628.30	
P94	5146	7061	638.98	NM	NM	Destroyed
P95	5146	6532	638.58	10.80	627.78	Hornets
P96	5156	6537	638.39	4.55	633.84	
P97	5098	6283	638.39	9.95	628.44	Hornets
P98	5130	6279	639.35	4.87	634.48	
P99	5020	5945	644.35	13.59	630.76	Odor
P100	5031	5948	643.93	9.10	634.83	Odor
P101	5550	5979	650.08	18.58	631.50	
P102	5517	5996	647.18	12.26	634.92	Damaged; cannot secure lock
P103	5672	6248	644.97	NM	NM	Dry; total depth = 13.44
P104	5639	6267	646.68	11.48	635.20	
P105	5885	6678	638.86	7.35	631.51	Graded over by ACS; found with metal detector
P106	5871	6685	638.10	3.81	634.29	Graded over by ACS; found with metal detector
P107	5766	7339	637.42	7.45	629.97	
P108	5757	7324	638.13	3.76	634.37	
ORC Piezometers						
ORC PZ1	5685	7574	638.57	10.41	628.16	
ORC PZ2	5758	7457	643.43	13.66	629.77	
ORC PZ3	5760	7540	640.24	10.96	629.28	
ORC PZ4	5827	7502	643.79	13.91	629.88	
ORC PZ5	5741	7753	636.21	7.68	628.53	
ORC PZ6	5759	7792	636.13	7.50	628.63	
ORC PZ7	5792	7839	635.85	7.33	628.52	
ORC PZ8	5813	7763	638.16	9.39	628.77	

All depth measurements and elevations are in units of feet.

Table 2
Upper Aquifer Wells Sampled - September 1999
American Chemical Service NPL Site
Griffith, Indiana

	Area of Groundwater Contamination	Well Identification	Location with Respect to Area of Groundwater Contamination	Monitoring Parameters September 1999
1	North	MW48	Internal	IND
2		MW49	Internal	IND

Notes:

IND: Arsenic, lead, VC, benzene, chloroethane, TCE, PCE, TCA, DCE, and 1,2-DCA.

TCL/TAL: Full scan Target Compound List and Target Analyte List Parameters

Table 3
Lower Aquifer Wells Sampled - September 1999
American Chemical Service NPL Site
Griffith, Indiana

	Well Identification	Well Screen Depth in Lower Aquifer	Location with Respect to Area of GW Contamination	Monitoring Parameters September 1999
1	MW10C	Upper	Internal	IND VOC
2	MW9R	Upper	Internal	IND

Notes:

IND: Arsenic, lead, VC, benzene, chloroethane, TCE, PCE, TCA, DCE, and 1,2-DCA.

IND VOC: VC, benzene, chloroethane, TCE, PCE, TCA, DCE, and 1,2-DCA.

TCL/TAL: Full scan Target Compound List and Target Analyte List Parameters

Table 4
Residential Wells Sampled - September 1999
American Chemical Service NPL Site
Griffith, Indiana

	Residential Well Identification	Location with Respect to Area of GW Contamination	Monitoring Parameters
			September 1999
1	RW1002 (PW-Y)	internal	TCL/TAL
2	RW1007 (PW-A)	internal	TCL/TAL
3	RW1009 (PW-B)	internal	TCL/TAL
4	RW1029 (PW-C)	upgradient	TCL/TAL
5	RW1033 (PW-D)	upgradient	TCL/TAL

Notes:

TCL/TAL: Full scan Target Compound List and Target Analyte List Parameters

RW1002 = Residential Well - 1002 Reder Road

Residential wells sampled are located in the Lower Aquifer.

Table 5
Summary of Field Parameter Results - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Well ID	Field Parameters					
	pH (std. units)	Conductivity (adjusted to 25° C) (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Oxidation- Reduction Potential (mV)
MW09R	7.01	940	13.3	4.2	0.12	157
MW10C	7.08	1669	14.3	8.2	0.73	148
MW48	6.95	717	16.7	7.7	0.27	135
MW49	6.85	129	17.9	6.7	0.24	129
RW1002 (PW-Y)	7.43	767	13.9	1.1	0.14	90
RW1007 (PW-A)	7.4	685	13.3	1.5	0.18	107
RW1009 (PW-B)	7.42	729	14.8	0.3	0.12	112
RW1029 (PW-C)	7.33	819	13.6	5.9	0.29	131
RW1033 (PW-D)	7.36	814	12.7	0.0	0.00	120

Notes:

NTU = nephelometric turbidity units

RW1002 = Residential Well - 1002 Reder Road

All residential wells sampled were located on Reder Road

Table 6
Vertical Gradients in Wetlands - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Piezometer Nest	Screen Interval		Screen Midpoint	Separation (feet)	Groundwater Elevation			Hydraulic Gradient
	Top	Bottom			Upper	Lower	delta	
P64	629.05	624.10	626.58	5	625.59			
P65	622.20	620.20	621.20			625.64	0.05	0.010
P66	629.45	625.10	627.28	8	625.32			
P67	620.50	618.50	619.50			625.24	-0.08	-0.010
P68	628.15	623.80	625.98	6	628.88			
P69	621.10	618.60	619.85			628.94	0.06	0.010
P70	628.55	624.20	626.38	6	628.00			
P71	621.00	619.00	620.00			628.33	0.33	0.055

Notes:

Water level measurements collected on September 13, 1999.

(-) = Downward Gradient

(+) = Upward Gradient

See *September 1997 Groundwater Sampling Results Report and Groundwater Monitoring Plan* (July 1998), p. 3, for an explanation of calculation method.

Table 7
Vertical Gradients in Lower Aquifer - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Well Nest	Screen Interval		Separation (feet)	Lowest Measurable Gradient	Groundwater Elevation				Vertical Gradients		
	Top	Bottom			Upper	Middle	Lower	delta	Upper/ Middle	Middle/ Lower	Upper/ Lower
MW7	595.9	590.9			619.39						
PZ44	578.4	573.4	13	0.0008		619.37		-0.02	-0.0016	NA	NA
MW8	598.2	593.2			618.12						
MW31	574.6	564.6	19	0.0005		619.08		0.96	WU		
MW32	547.3	537.3	17	0.0006			619.16	0.08		0.0046	0.0227
MW9R	605.9	600.9			619.32						
MW29	585.9	575.9	15	0.0007		619.47		0.15	0.0100		
MW34	552.8	542.8	23	0.0004			619.51	0.04		0.0017	0.0040
MW30	585.0	575.0	13	0.0008	NA	618.95			NA		
MW33	556.0	546.0	19	0.0005			618.96	0.01		WU	NA
MW28	588.7	578.7			619.85						
PZ42	568.5	563.5	10	0.0010		619.64		-0.21	-0.0206		
PZ43	554.5	549.5	9	0.0011			620.19	0.55		0.0611	0.0140
MW52	615.6	605.6			619.07						
MW53	555.7	545.7	50	0.0002		NA	619.06	-0.01	NA	NA	-0.0002
MW54R	608.1	598.1			619.28						
MW55	547.6	537.6	51	0.0002		NA	618.92	-0.36	NA	NA	-0.0071

Notes:

Water levels collected by Montgomery Watson on September 13, 1999.

NA = Not Applicable. Calculating vertical gradient only for upper/lower interval at this location.

WU = Within uncertainty of measurement technique.

(-) = Downward Gradient

(+) = Upward Gradient

See *September 1997 Groundwater Sampling Results Report and Groundwater Monitoring Plan* (July 1998), p. 4, for an explanation of calculation method.

Table 8
Vertical Gradients Between Upper and Lower Aquifers - September 1999
American Chemical Service NPL Site
Griffith, Indiana

Well Designation	Screen Interval		Screen Midpoint	Separation (feet)	Groundwater Elevation			Hydraulic Gradient
	Top	Bottom			Upper	Lower	delta	
P28	634.30	629.30	631.80	11	630.07			
MW8	598.20	593.20	595.70			618.12	-11.95	-1.09
P27	631.02	626.02	628.52	23	DRY			
MW9R	605.90	600.90	603.40			619.32	NA	NA
P8	635.36	630.36	632.86	18	631.23			
MW7	595.90	590.90	593.40			619.39	-12	-0.66

Notes:

Water levels collected on September 13, 1999.

(-) = Downward Gradient

(+) = Upward Gradient

NA = Not applicable, since P27 was dry.

See *September 1997 Groundwater Sampling Results Report and Groundwater Monitoring Plan* (July 1998), p. 4, for an explanation of calculation method.

Table 9
Summary of Organic Compound Detections in the Upper Aquifer
Validated Results -September 1999
American Chemical Service NPL Site
Griffith, Indiana

Parameter	MW48		MW49	
	Jun-99	BV	Jun-99	BV
VOCs (ug/L)				
Chloroethane	290	DJ/DJ	1000	210 J/J 715
Benzene	5,400	D/	9500	2,200 6750

Notes:

NA = Not analyzed for this parameter

/ = No data qualifier required

J/_ = Data qualifier added by laboratory

_/J = Data qualifier added by data validator

Data qualifiers are defined in Appendix C.

A blank cell indicates the parameter was not detected.

BV = Baseline Value

Table 10
Summary of Organic Compound Detections in the Lower Aquifer
Validated Results -September 1999
American Chemical Service NPL Site
Griffith, Indiana

Parameter	MW09R		MW10C	
	Jun-99	BV	Jun-99	BV
VOCs (ug/L)				
Benzene	120	D/	310	83
Chloroethane	650	D/	2900	88

Notes:

NA = Not analyzed for this parameter

/ = No data qualifier required

J/_ = Data qualifier added by laboratory

_/J = Data qualifier added by data validator

Data qualifiers are defined in Appendix C

A blank cell indicates parameter not detected.

BV = Baseline Value

Table 11
Comparison of Private Well Detections to
Maximum Contaminant Levels (MCLs) - September 1999
American Chemical Services NPL Site
Griffith, Indiana

Analyte	Sample Location and Concentration (ug/L)					MCL (ug/L)
	PW-A	PW-B	PW-C	PW-D	PW-Y	
Aluminum	--	--	--	--	--	NA
Antimony	3.3 B/J	--	2 B/	3.1 B/J	--	6
Arsenic	--	--	--	2.1 B/J	--	50
Barium	110 B/J	125 B/J	163 B/J	155 B/J	145 B/J	2,000
Beryllium	--	--	--	--	--	4
Cadmium	--	--	--	--	--	5
Calcium	78,400 /J	87,600 /J	84,400 /J	94,200 /J	83,800 /J	NA
Chromium	1.9 B/J	2.2 B/J	2.7 B/J	3.5 B/J	2.4 B/J	100
Cobalt	1.1 B/J	--	--	--	--	NA
Copper	3.2 B/J	4 B/J	1.9 B/J	1,090	7.9 B/J	1,300
Cyanide	--	--	--	NM	--	200
Iron	2,310	3,300	2,570	3,940	3,070	NA
Lead	--	--	--	39.8	--	15
Magnesium	38,400	41,600	49,700	47,600	45,200	NA
Manganese	46.8	59.6	33.4	43.4	32.1	NA
Mercury	--	--	--	--	--	2
Nickel	2.4 B/J	3 B/J	2.3 B/J	74.6	1.8 B/J	NA
Potassium	1,580 B/J	1,620 B/J	2,440 B/J	2,310 B/J	2,420 B/J	NA
Selenium	--	--	--	--	--	50
Silver	0.3 B/J	--	0.99 B/J	0.3 B/J	0.51 B/J	NA
Sodium	16,200 E/	16,600 E/	25,400 E/	21,100 E/	24,100 E/	NA
Thallium	--	--	--	--	--	2
Vanadium	0.82 B/J	--	--	--	--	NA
Zinc	62.2 E/J	10.4 BE/J	3.7 BE/J	1,180 E/J	12.3 BE/J	NA

Notes:

-- = Analyte not detected

NA = MCL does not exist for this analyte

B = Analyte in blank

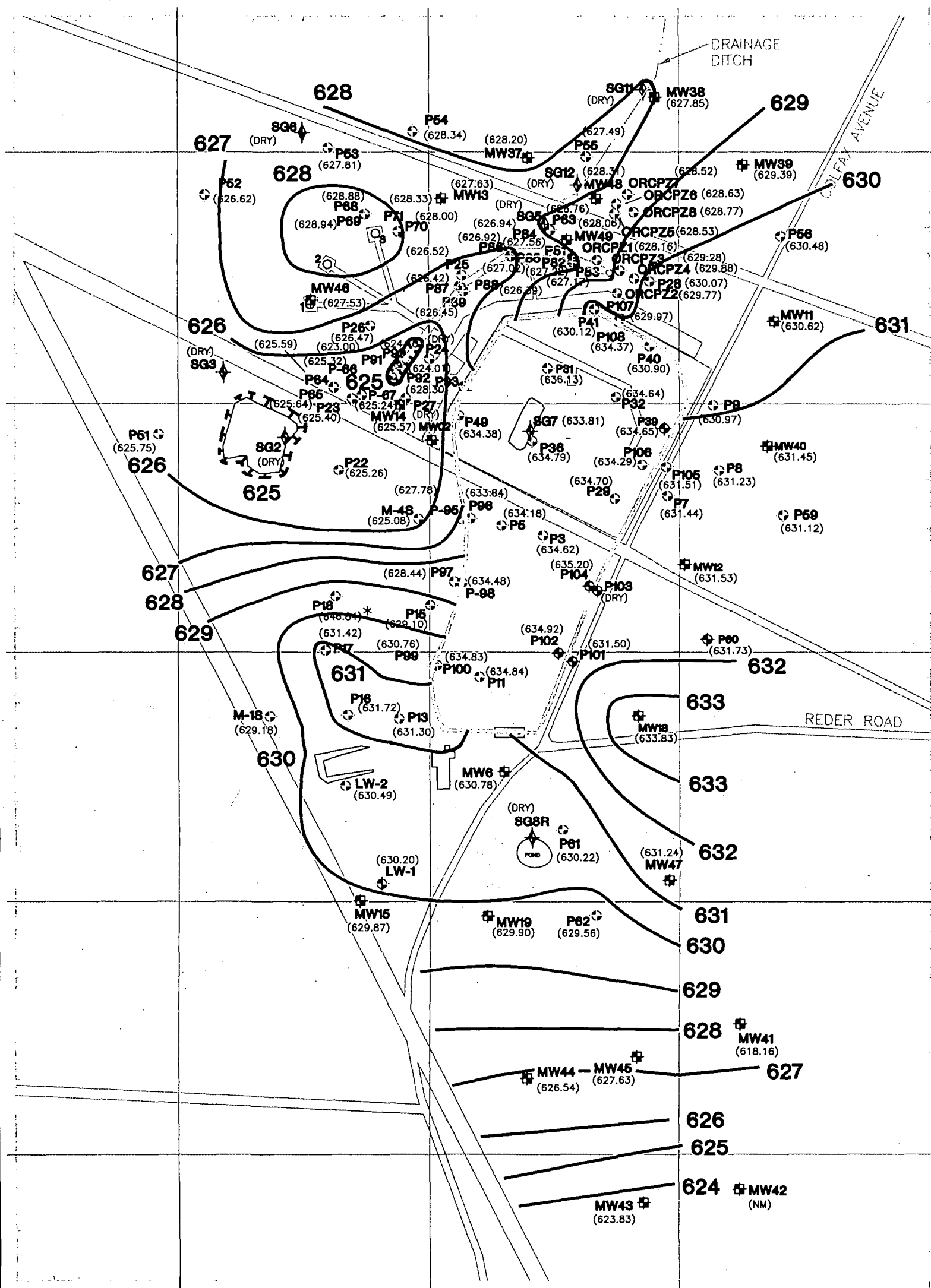
J = Estimated concentration

E = Estimated concentration for inorganics (lab qualifier)

NM = PW-D was analyzed for cyanide in November 1999

Shaded cells indicate exceedance of MCL





LEGEND

- MW12** UPPER AQUIFER WELL LOCATION AND DESIGNATION
- M-18** LEACHATE WELL LOCATION AND DESIGNATION
- P61** PIEZOMETER LOCATION AND DESIGNATION
- SG10** STAFF GAUGE LOCATION AND DESIGNATION
- S** SURFACE DISCHARGE LOCATION FOR PERIMETER GROUND WATER CONTAINMENT SYSTEM
- ORCPZ1** ORC PIEZOMETER LOCATION AND DESIGNATION

(632.00) GROUNDWATER ELEVATION

(632.00)* GROUNDWATER ELEVATION MEASURED BUT NOT USED FOR DETERMINATION OF THE POTENTIOMETRIC SURFACE

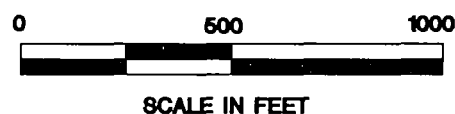
630 — GROUNDWATER ELEVATION CONTOUR BASED ON GROUNDWATER ELEVATION DATA (DASHED WHERE INFERRED)

— BARRIER WALL

PERIMETER GROUND WATER CONTAINMENT SYSTEM

NOTES

- GROUNDWATER ELEVATIONS FOR WATER TABLE CONTOURS WERE MEASURED AT THE SITE ON SEPTEMBER 13, 1999.



SCALE IN FEET

SCALE

AS SHOWN



MONTGOMERY WATSON
Chicago, Illinois





AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

UPPER AQUIFER WATER TABLE MAP
SEPTEMBER 1999 GROUNDWATER
MONITORING RESULTS

1

FIGURE

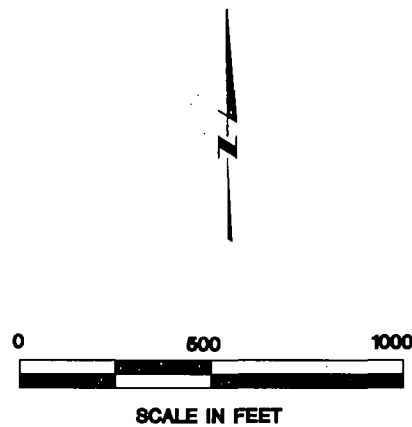
LEGEND

- | | |
|---|---|
|  | BARRIER WALL |
|  | PERIMETER GROUND WATER CONTAINMENT SYSTEM |
|  | GRIFFITH LANDFILL BOUNDARY |
|  | LOWER AQUIFER WELL LOCATION AND DESIGNATION |
| (632.00) | GROUNDWATER ELEVATION |

619.6 ——— GROUNDWATER ELEVATION CONTOUR BASED
ON GROUNDWATER ELEVATION DATA

NOTE

GROUNDWATER ELEVATIONS FOR POTENTIOMETRIC SURFACE
CONTOURS WERE MEASURED ON SEPTEMBER 13, 1999



SCALE
AS SHOWN

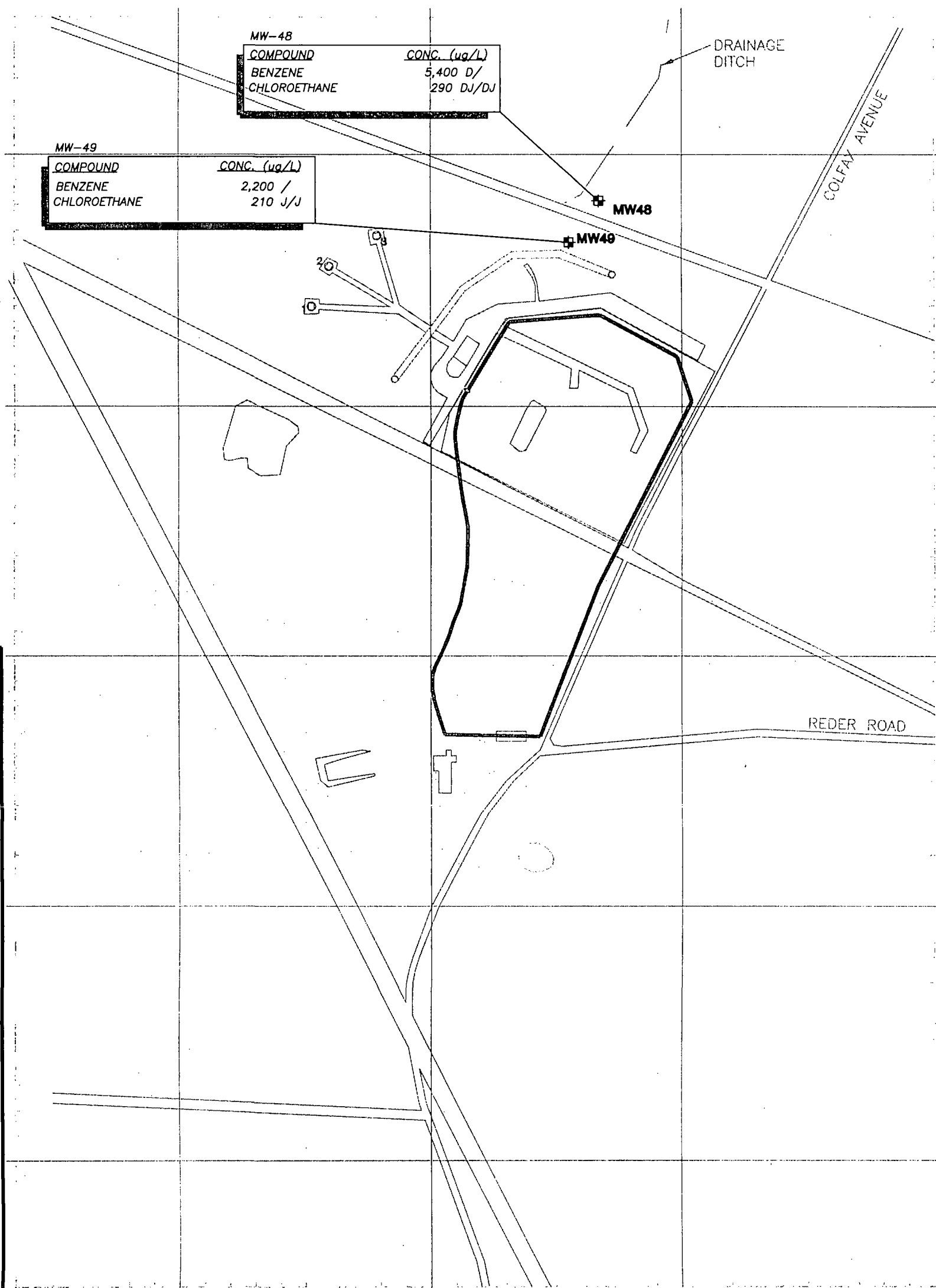


MONTGOMERY WATSON
Chicago, Illinois

AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

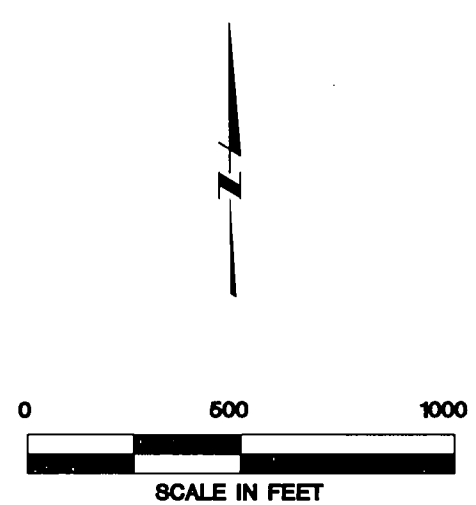
LOWER AQUIFER POTENTIOMETRIC SURFACE
SEPTEMBER 1999

FIGURE 2



LEGEND

- MW48** UPPER AQUIFER WELL LOCATION AND DESIGNATION
- SURFACE DISCHARGE LOCATION FOR PERIMETER GROUND WATER CONTAINMENT SYSTEM
- BARRIER WALL
- PERIMETER GROUND WATER CONTAINMENT SYSTEM
- DATA QUALIFIER ADDED BY LABORATORY
- DATA QUALIFIER ADDED BY DATA VALIDATOR
- NO DATA QUALIFIER REQUIRED

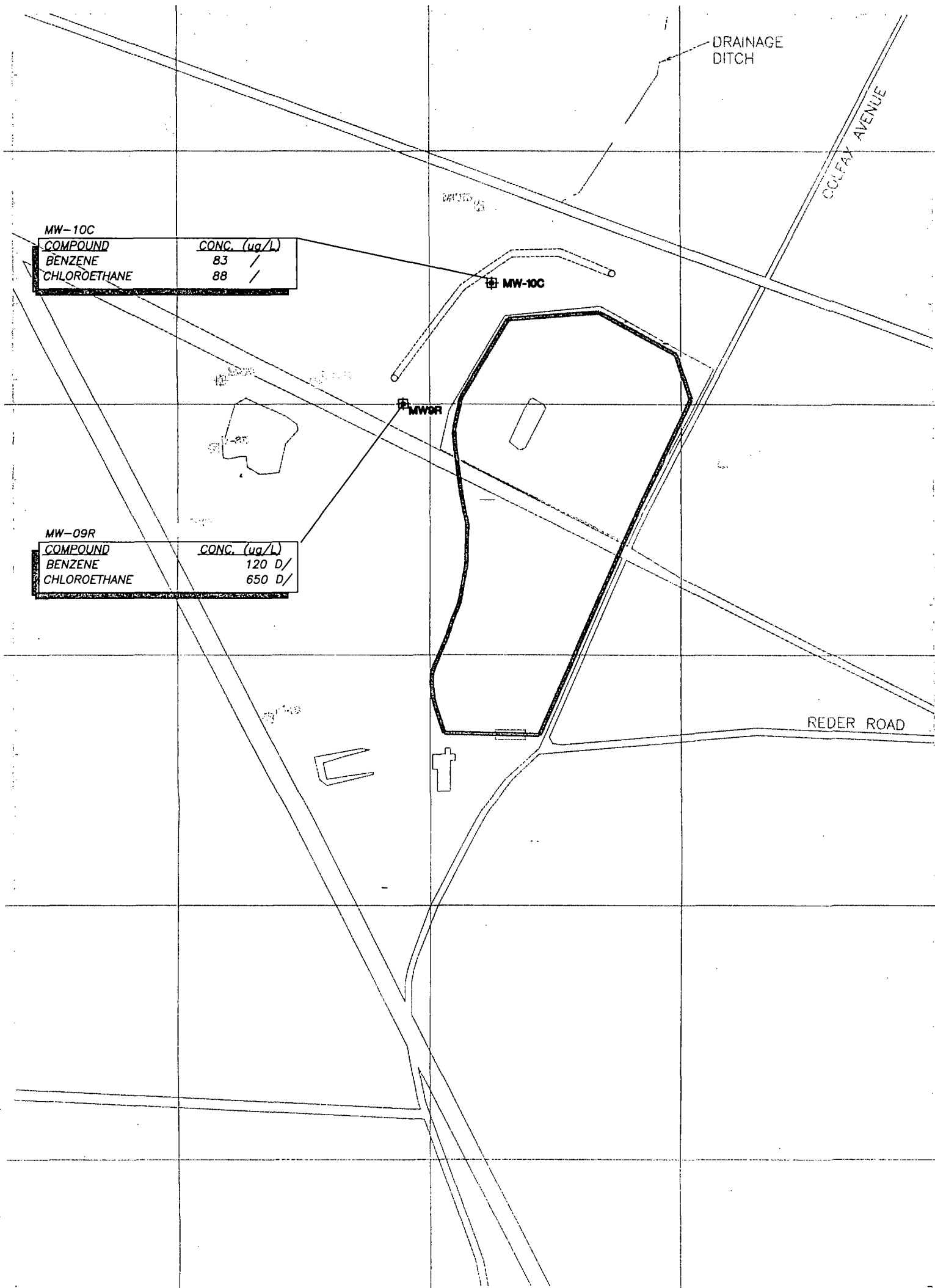


SCALE
AS SHOWN



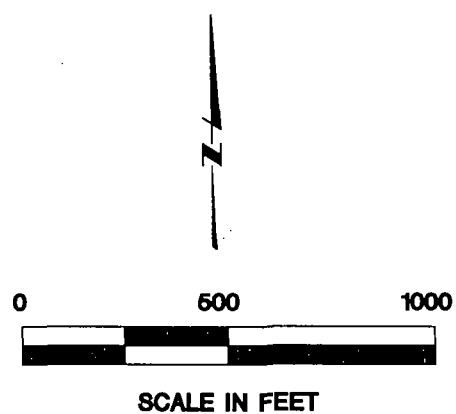
AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

VOCs DETECTED IN UPPER AQUIFER
MONITORING WELLS SEPTEMBER 1999



LEGEND

- MW-09R** LOWER AQUIFER WELL LOCATION AND DESIGNATION
- BARRIER WALL
- PERIMETER GROUND WATER CONTAINMENT SYSTEM
- D/** DATA QUALIFIER ADDED BY LABORATORY
- /** NO DATA QUALIFIER REQUIRED



SCALE
AS SHOWN

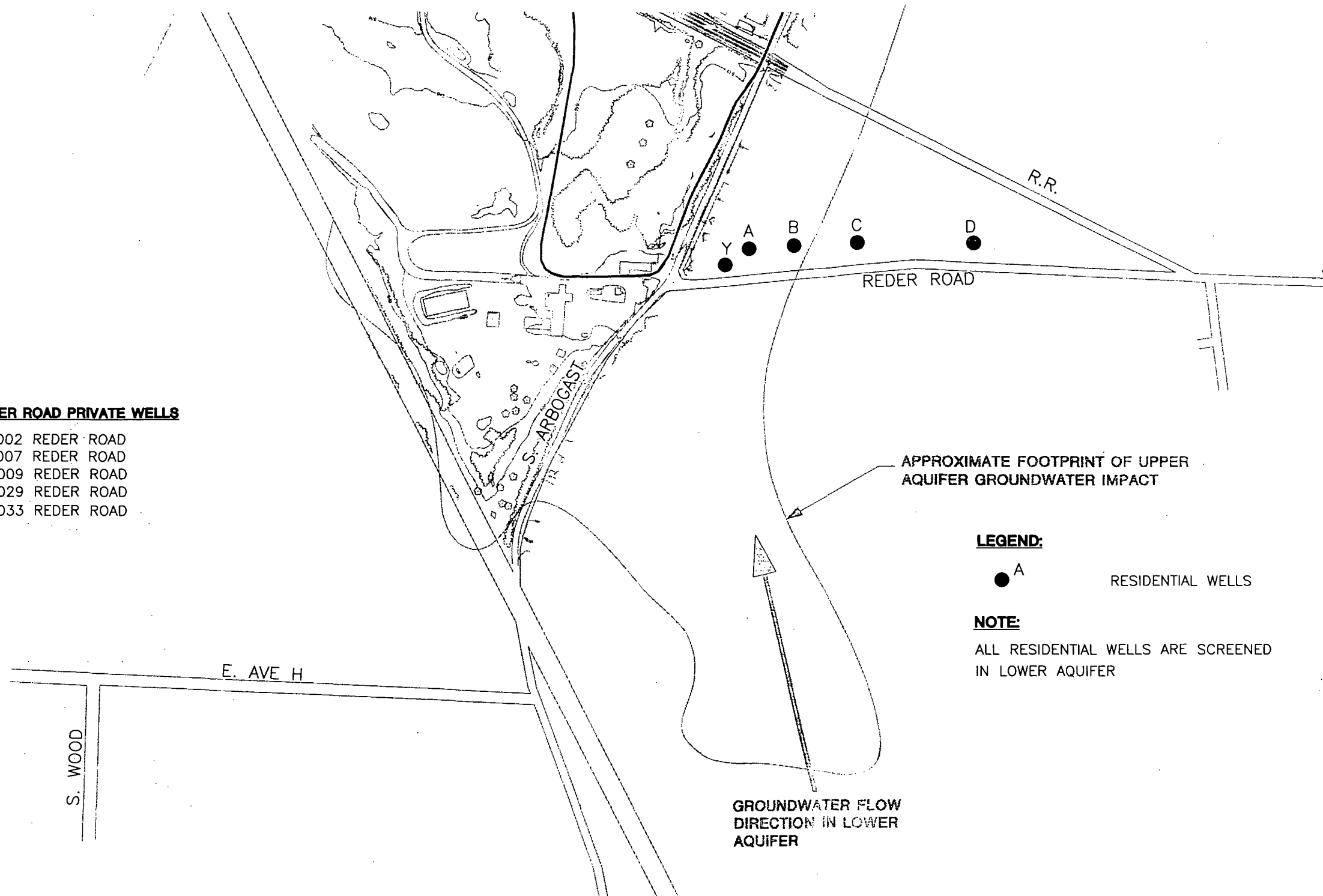


AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

VOCs DETECTED IN LOWER AQUIFER
MONITORING WELLS SEPTEMBER 1999

REDER ROAD PRIVATE WELLS

Y 1002 REDER ROAD
 A 1007 REDER ROAD
 B 1009 REDER ROAD
 C 1029 REDER ROAD
 D 1033 REDER ROAD



APPROXIMATE FOOTPRINT OF UPPER
 AQUIFER GROUNDWATER IMPACT

LEGEND:

● A RESIDENTIAL WELLS

NOTE:

ALL RESIDENTIAL WELLS ARE SCREENED
 IN LOWER AQUIFER

SCALE
 AS SHOWN



MONTGOMERY WATSON
 Chicago, Illinois

AMERICAN CHEMICAL SERVICES, INC.
 NPL SITE
 GRIFFITH, INDIANA

RESIDENTIAL WELL LOCATIONS

FIGURE
5





APPENDIX A

**COMPARISON OF SEPTEMBER 1999 RESULTS
TO BASELINE MAXIMUM CONCENTRATIONS**

Comparison of Results to Baseline Highest Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-09R	1,1,1-Trichloroethane	UG/L	200		U		56
MW-09R	1,1,2-Trichloroethane	UG/L	200		U		56
MW-09R	1,1-Dichloroethene	UG/L	200		U		56
MW-09R	1,2-Dichloroethene (total)	UG/L	200		U		56
MW-09R	Benzene	UG/L	310	120	D		56
MW-09R	Chloroethane	UG/L	2,900	650	D		56
MW-09R	Tetrachloroethene	UG/L	200		U		56
MW-09R	Trichloroethene	UG/L	200		U		56
MW-09R	Vinyl chloride	UG/L	200		U		56
MW-10C	1,1,1-Trichloroethane	UG/L	150		U		10
MW-10C	1,1,2-Trichloroethane	UG/L	150		U		10
MW-10C	1,1,2-Trichloroethane	UG/L	150		U		10
MW-10C	1,2-Dichloroethene (total)	UG/L	150		U		10
MW-10C	Benzene	UG/L	150	83			10
MW-10C	Chloroethane	UG/L	420	88			10
MW-10C	Tetrachloroethene	UG/L	150		U		10
MW-10C	Trichloroethene	UG/L	150		U		10
MW-10C	Vinyl chloride	UG/L	129		U		10
MW-48	1,1,1-Trichloroethane	UG/L	500		U		330
MW-48	1,1,2-Trichloroethane	UG/L	500		U		330
MW-48	1,1-Dichloroethene	UG/L	500		U		330
MW-48	1,2-Dichloroethene (total)	UG/L	500		U		330
MW-48	Benzene	UG/L	9,500	5,400	D		330
MW-48	Chloroethane	UG/L	1,000	290	DJ	DJ	330
MW-48	Tetrachloroethene	UG/L	500		U		330
MW-48	Trichloroethene	UG/L	500		U		330
MW-48	Vinyl chloride	UG/L	500		U		330
MW-49	1,1,1-Trichloroethane	UG/L	500		U		250
MW-49	1,1,2-Trichloroethane	UG/L	500		U		250
MW-49	1,1-Dichloroethene	UG/L	500		U		250
MW-49	1,2-Dichloroethene (total)	UG/L	500		U		250
MW-49	Benzene	UG/L	6,750	2,200			250
MW-49	Chloroethane	UG/L	715	210	J	J	250
MW-49	Tetrachloroethene	UG/L	500		U		250
MW-49	Trichloroethene	UG/L	500		U		250
MW-49	Vinyl chloride	UG/L	500		U		250

BOLD = Exceedance

NA = Not Applicable

Page 1

DMD/dmd/CAS

J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]

1252042:221601

Comparison of Results to Baseline Highest Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-09R	Arsenic	UG/L	6.8	2.1	B	J	2
MW-09R	Lead	UG/L	6.7		U		1
MW-48	Arsenic	UG/L	13	6.6	B	J	2
MW-48	Lead	UG/L	7.7	1.3	B	J	1
MW-49	Arsenic	UG/L	38	25.5			2
MW-49	Lead	UG/L	4.4		U		1

BOLD = Exceedance

NA = Not Applicable

Page 1

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-A	1,1,1-Trichloroethane	UG/L	1.0		U		1
PW-A	1,1,2,2-Tetrachloroethane	UG/L	1.0		U		1
PW-A	1,1,2-Trichloroethane	UG/L	1.0		U		1
PW-A	1,1-Dichloroethane	UG/L	1.0		U		1
PW-A	1,1-Dichloroethene	UG/L	1.0		U		1
PW-A	1,2-Dibromo-3-chloropropane	UG/L	NA		U	UJ	1
PW-A	1,2-Dibromoethane	UG/L	NA		U		1
PW-A	1,2-Dichloroethane	UG/L	1.0		U		1
PW-A	1,2-Dichloroethene (total)	UG/L	NA		U		1
PW-A	1,2-Dichloropropane	UG/L	1.0		U		1
PW-A	2-Butanone	UG/L	5.0		U	UJ	5
PW-A	2-Hexanone	UG/L	5.0		U	UJ	5
PW-A	4-Methyl-2-pentanone	UG/L	5.0		U		5
PW-A	Acetone	UG/L	10		U	UJ	5
PW-A	Benzene	UG/L	1.0		U		1
PW-A	Bromochloromethane	UG/L	NA		U		1
PW-A	Bromodichloromethane	UG/L	1.0		U		1
PW-A	Bromoform	UG/L	1.0		U		1
PW-A	Bromomethane	UG/L	1.0		U		1
PW-A	Carbon disulfide	UG/L	1.0		U		1
PW-A	Carbon Tetrachloride	UG/L	1.0		U		1
PW-A	Chlorobenzene	UG/L	1.0		U		1
PW-A	Chloroethane	UG/L	1.0		U		1
PW-A	Chloroform	UG/L	1.0		U		1
PW-A	Chloromethane	UG/L	1.0		U		1
PW-A	cis-1,3-Dichloropropene	UG/L	1.0		U		1
PW-A	Dibromochloromethane	UG/L	1.0		U		1
PW-A	Ethyl Benzene	UG/L	1.0		U		1
PW-A	Methylene chloride	UG/L	1.0	1	JB	JB	2
PW-A	Styrene	UG/L	1.0		U		1
PW-A	Tetrachloroethene	UG/L	1.0		U		1
PW-A	Toluene	UG/L	1.0		U		1
PW-A	trans-1,3-Dichloropropene	UG/L	1.0		U	UJ	1
PW-A	Trichloroethene	UG/L	1.0		U		1
PW-A	Vinyl chloride	UG/L	1.0		U		1
PW-A	Xylenes (total)	UG/L	5.0		U		1
PW-B	1,1,1-Trichloroethane	UG/L	1.0		U		1
PW-B	1,1,2,2-Tetrachloroethane	UG/L	1.0		U		1
PW-B	1,1,2-Trichloroethane	UG/L	1.0		U		1
PW-B	1,1-Dichloroethane	UG/L	1.0		U		1
PW-B	1,1-Dichloroethene	UG/L	1.0		U		1
PW-B	1,2-Dibromo-3-chloropropane	UG/L	NA		U	UJ	1
PW-B	1,2-Dibromoethane	UG/L	NA		U		1
PW-B	1,2-Dichloroethane	UG/L	1.0		U		1
PW-B	1,2-Dichloroethene (total)	UG/L	NA		U		1
PW-B	1,2-Dichloropropane	UG/L	1.0		U		1

BOLD = Exceedance

NA = Not Applicable

Page 1

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-B	2-Butanone	UG/L	5.0		U	UJ	5
PW-B	2-Hexanone	UG/L	5.0		U	UJ	5
PW-B	4-Methyl-2-pentanone	UG/L	5.0		U		5
PW-B	Acetone	UG/L	5.0		U	UJ	5
PW-B	Benzene	UG/L	1.0		U		1
PW-B	Bromochloromethane	UG/L	NA		U		1
PW-B	Bromodichloromethane	UG/L	1.0		U		1
PW-B	Bromoform	UG/L	1.0		U		1
PW-B	Bromomethane	UG/L	1.0		U		1
PW-B	Carbon disulfide	UG/L	1.0		U		1
PW-B	Carbon Tetrachloride	UG/L	1.0		U		1
PW-B	Chlorobenzene	UG/L	1.0		U		1
PW-B	Chloroethane	UG/L	1.0		U		1
PW-B	Chloroform	UG/L	1.0		U		1
PW-B	Chloromethane	UG/L	1.0		U		1
PW-B	cis-1,3-Dichloropropene	UG/L	1.0		U		1
PW-B	Dibromochloromethane	UG/L	1.0		U		1
PW-B	Ethyl Benzene	UG/L	1.0		U		1
PW-B	Methylene chloride	UG/L	1.0	1	JB	JB	2
PW-B	Styrene	UG/L	1.0		U		1
PW-B	Tetrachloroethene	UG/L	1.0		U		1
PW-B	Toluene	UG/L	1.0	0.1	J	J	2
PW-B	trans-1,3-Dichloropropene	UG/L	1.0		U	UJ	1
PW-B	Trichloroethene	UG/L	1.0		U		1
PW-B	Vinyl chloride	UG/L	1.0		U		1
PW-B	Xylenes (total)	UG/L	5.0		U		1
PW-C	1,1,1-Trichloroethane	UG/L	1.0		U		1
PW-C	1,1,2,2-Tetrachloroethane	UG/L	1.0		U		1
PW-C	1,1,2-Trichloroethane	UG/L	1.0		U		1
PW-C	1,1-Dichloroethane	UG/L	1.0		U		1
PW-C	1,1-Dichloroethene	UG/L	1.0		U		1
PW-C	1,2-Dibromo-3-chloropropane	UG/L	NA		U	UJ	1
PW-C	1,2-Dibromoethane	UG/L	NA		U		1
PW-C	1,2-Dichloroethane	UG/L	1.0		U		1
PW-C	1,2-Dichloroethene (total)	UG/L	NA		U		1
PW-C	1,2-Dichloropropane	UG/L	1.0		U		1
PW-C	2-Butanone	UG/L	5.0		U	UJ	5
PW-C	2-Hexanone	UG/L	5.0		U	UJ	5
PW-C	4-Methyl-2-pentanone	UG/L	5.0		U		5
PW-C	Acetone	UG/L	5.0		U	UJ	5
PW-C	Benzene	UG/L	1.0		U		1
PW-C	Bromochloromethane	UG/L	NA		U		1
PW-C	Bromodichloromethane	UG/L	1.0		U		1
PW-C	Bromoform	UG/L	1.0		U		1
PW-C	Bromomethane	UG/L	1.0		U		1
PW-C	Carbon disulfide	UG/L	1.0		U		1

BOLD = Exceedance

NA = Not Applicable

Page 2

DMD/dmd

J:\1252042\Databases\1998\ACS GW.mdb\rptPWNewResultsVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-C	Carbon Tetrachloride	UG/L	1.0		U		1
PW-C	Chlorobenzene	UG/L	1.0		U		1
PW-C	Chloroethane	UG/L	1.0		U		1
PW-C	Chloroform	UG/L	1.0		U		1
PW-C	Chloromethane	UG/L	1.0		U		1
PW-C	cis-1,3-Dichloropropene	UG/L	1.0		U		1
PW-C	Dibromochloromethane	UG/L	1.0		U		1
PW-C	Ethyl Benzene	UG/L	1.0		U		1
PW-C	Methylene chloride	UG/L	1.0	1	JB	JB	2
PW-C	Styrene	UG/L	1.0		U		1
PW-C	Tetrachloroethene	UG/L	1.0		U		1
PW-C	Toluene	UG/L	1.0		U		1
PW-C	trans-1,3-Dichloropropene	UG/L	1.0		U	UJ	1
PW-C	Trichloroethene	UG/L	1.0		U		1
PW-C	Vinyl chloride	UG/L	1.0		U		1
PW-C	Xylenes (total)	UG/L	5.0		U		1
PW-D	1,1,1-Trichloroethane	UG/L	1.0		U		1
PW-D	1,1,2,2-Tetrachloroethane	UG/L	1.0		U		1
PW-D	1,1,2-Trichloroethane	UG/L	1.0		U		1
PW-D	1,1-Dichloroethane	UG/L	1.0		U		1
PW-D	1,1-Dichloroethene	UG/L	1.0		U		1
PW-D	1,2-Dibromo-3-chloropropane	UG/L	NA		U	UJ	1
PW-D	1,2-Dibromoethane	UG/L	NA		U		1
PW-D	1,2-Dichloroethane	UG/L	1.0		U		1
PW-D	1,2-Dichloroethene (total)	UG/L	NA		U		1
PW-D	1,2-Dichloropropane	UG/L	1.0		U		1
PW-D	2-Butanone	UG/L	5.0		U	UJ	5
PW-D	2-Hexanone	UG/L	5.0		U	UJ	5
PW-D	4-Methyl-2-pentanone	UG/L	5.0		U		5
PW-D	Acetone	UG/L	5.0		U	UJ	5
PW-D	Benzene	UG/L	1.0		U		1
PW-D	Bromochloromethane	UG/L	NA		U		1
PW-D	Bromodichloromethane	UG/L	1.0		U		1
PW-D	Bromoform	UG/L	1.0		U		1
PW-D	Bromomethane	UG/L	1.0		U		1
PW-D	Carbon disulfide	UG/L	1.0		U		1
PW-D	Carbon Tetrachloride	UG/L	1.0		U		1
PW-D	Chlorobenzene	UG/L	1.0		U		1
PW-D	Chloroethane	UG/L	1.0		U		1
PW-D	Chloroform	UG/L	1.0		U		1
PW-D	Chloromethane	UG/L	1.0		U		1
PW-D	cis-1,3-Dichloropropene	UG/L	1.0		U		1
PW-D	Dibromochloromethane	UG/L	1.0		U		1
PW-D	Ethyl Benzene	UG/L	1.0		U		1
PW-D	Methylene chloride	UG/L	2.0	6			2
PW-D	Styrene	UG/L	1.0		U		1

BOLD = Exceedance

NA = Not Applicable

Page 3

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-D	Tetrachloroethene	UG/L	1.0		U		1
PW-D	Toluene	UG/L	1.0	0.3	J	J	2
PW-D	trans-1,3-Dichloropropene	UG/L	1.0		U	UJ	1
PW-D	Trichloroethene	UG/L	1.0		U		1
PW-D	Vinyl chloride	UG/L	1.0		U		1
PW-D	Xylenes (total)	UG/L	5.0		U		1
PW-Y	1,1,1-Trichloroethane	UG/L	1.0		U		1
PW-Y	1,1,2,2-Tetrachloroethane	UG/L	1.0		U		1
PW-Y	1,1,2-Trichloroethane	UG/L	1.0		U		1
PW-Y	1,1-Dichloroethane	UG/L	1.0		U		1
PW-Y	1,1-Dichloroethene	UG/L	1.0		U		1
PW-Y	1,2-Dibromo-3-chloropropane	UG/L	NA		U	UJ	1
PW-Y	1,2-Dibromoethane	UG/L	NA		U		1
PW-Y	1,2-Dichloroethane	UG/L	1.0		U		1
PW-Y	1,2-Dichloroethene (total)	UG/L	NA		U		1
PW-Y	1,2-Dichloropropane	UG/L	1.0		U		1
PW-Y	2-Butanone	UG/L	NA		U	UJ	5
PW-Y	2-Hexanone	UG/L	5.0		U	UJ	5
PW-Y	4-Methyl-2-pentanone	UG/L	5.0		U		5
PW-Y	Acetone	UG/L	NA		U	UJ	5
PW-Y	Benzene	UG/L	1.0		U		1
PW-Y	Bromochloromethane	UG/L	NA		U		1
PW-Y	Bromodichloromethane	UG/L	1.0		U		1
PW-Y	Bromoform	UG/L	1.0		U		1
PW-Y	Bromomethane	UG/L	1.0		U		1
PW-Y	Carbon disulfide	UG/L	1.0		U		1
PW-Y	Carbon Tetrachloride	UG/L	1.0		U		1
PW-Y	Chlorobenzene	UG/L	1.0		U		1
PW-Y	Chloroethane	UG/L	1.0		U		1
PW-Y	Chloroform	UG/L	1.0		U		1
PW-Y	Chloromethane	UG/L	NA		U		1
PW-Y	cis-1,3-Dichloropropene	UG/L	1.0		U		1
PW-Y	Dibromochloromethane	UG/L	1.0		U		1
PW-Y	Ethyl Benzene	UG/L	1.0		U		1
PW-Y	Methylene chloride	UG/L	2.0	2.1			2
PW-Y	Styrene	UG/L	1.0		U		1
PW-Y	Tetrachloroethene	UG/L	1.0		U		1
PW-Y	Toluene	UG/L	1.0		U		1
PW-Y	trans-1,3-Dichloropropene	UG/L	1.0		U	UJ	1
PW-Y	Trichloroethene	UG/L	1.0		U		1
PW-Y	Vinyl chloride	UG/L	1.0		U		1
PW-Y	Xylenes (total)	UG/L	5.0		U		1

BOLD = Exceedance

NA = Not Applicable

Page 4

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-A	1,2,4-Trichlorobenzene	UG/L	5.0		U		1
PW-A	1,2-Dichlorobenzene	UG/L	1.0		U		1
PW-A	1,3-Dichlorobenzene	UG/L	1.0		U		1
PW-A	1,4-Dichlorobenzene	UG/L	1.0		U		1
PW-A	2,2'-oxybis(1-Chloropropane)	UG/L	5.0		U		5
PW-A	2,4,5-Trichlorophenol	UG/L	20		U		19
PW-A	2,4,6-Trichlorophenol	UG/L	5.0		U		5
PW-A	2,4-Dichlorophenol	UG/L	5.0		U		5
PW-A	2,4-Dimethylphenol	UG/L	5.0		U		5
PW-A	2,4-Dinitrophenol	UG/L	20		U		19
PW-A	2,4-Dinitrotoluene	UG/L	5.0		U		5
PW-A	2,6-Dinitrotoluene	UG/L	5.0		U		5
PW-A	2-Chloronaphthalene	UG/L	5.0		U		5
PW-A	2-Chlorophenol	UG/L	5.0		U		5
PW-A	2-Methylnaphthalene	UG/L	5.0		U		5
PW-A	2-Methylphenol	UG/L	5.0		U		5
PW-A	2-Nitroaniline	UG/L	20		U		19
PW-A	2-Nitrophenol	UG/L	5.0		U		5
PW-A	3,3'-Dichlorobenzidine	UG/L	5.0		U		5
PW-A	3-Nitroaniline	UG/L	20		U		19
PW-A	4,6-Dinitro-2-methylphenol	UG/L	20		U		19
PW-A	4-Bromophenyl-phenylether	UG/L	5.0		U		5
PW-A	4-Chloro-3-methylphenol	UG/L	5.0		U		5
PW-A	4-Chloroaniline	UG/L	5.0		U		5
PW-A	4-Chlorophenyl-phenyl ether	UG/L	5.0		U		5
PW-A	4-Methylphenol	UG/L	5.0		U		5
PW-A	4-Nitroaniline	UG/L	20		U		19
PW-A	4-Nitrophenol	UG/L	20		U		19
PW-A	Acenaphthene	UG/L	5.0		U		5
PW-A	Acenaphthylene	UG/L	5.0		U		5
PW-A	Anthracene	UG/L	5.0		U		5
PW-A	Benzo(a)anthracene	UG/L	5.0		U		5
PW-A	Benzo(a)pyrene	UG/L	5.0		U		5
PW-A	Benzo(b)fluoranthene	UG/L	5.0		U		5
PW-A	Benzo(g,h,i)perylene	UG/L	5.0		U		5
PW-A	Benzo(k)fluoranthene	UG/L	5.0		U		5
PW-A	Benzoic Acid	UG/L	NA		U		96
PW-A	Benzyl alcohol	UG/L	NA		U		5
PW-A	Bis(2-chloroethoxy)methane	UG/L	5.0		U		5
PW-A	bis(2-chloroethyl) ether	UG/L	5.0		U		5
PW-A	Bis(2-ethylhexyl)phthalate	UG/L	5.0		U		5
PW-A	Butylbenzylphthalate	UG/L	5.0		U		5
PW-A	Chrysene	UG/L	5.0		U		5
PW-A	Di-n-butylphthalate	UG/L	5.0		U		5
PW-A	Di-n-octylphthalate	UG/L	5.0		U		5
PW-A	Dibenzo(a,h)anthracene	UG/L	5.0		U		5

BOLD = Exceedance

NA = Not Applicable

Page 1

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsSVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-A	Dibenzofuran	UG/L	5.0		U		5
PW-A	Diethylphthalate	UG/L	5.0		U		5
PW-A	Dimethylphthalate	UG/L	5.0		U		5
PW-A	Fluoranthene	UG/L	5.0		U		5
PW-A	Fluorene	UG/L	5.0		U	UJ	5
PW-A	Hexachlorobenzene	UG/L	5.0		U		5
PW-A	Hexachlorobutadiene	UG/L	5.0		U		5
PW-A	Hexachlorocyclopentadiene	UG/L	5.0		U		5
PW-A	Hexachloroethane	UG/L	5.0		U		5
PW-A	Indeno(1,2,3-cd)pyrene	UG/L	5.0		U		5
PW-A	Isophorone	UG/L	5.0		U		5
PW-A	N-Nitroso-di-n-propylamine	UG/L	5.0		U		5
PW-A	N-Nitrosodiphenylamine	UG/L	5.0		U		5
PW-A	Naphthalene	UG/L	5.0		U		5
PW-A	Nitrobenzene	UG/L	5.0		U		5
PW-A	Pentachlorophenol	UG/L	20		U		17
PW-A	Phenanthrene	UG/L	5.0		U		5
PW-A	Phenol	UG/L	5.0		U		5
PW-A	Pyrene	UG/L	5.0		U		5
PW-B	1,2,4-Trichlorobenzene	UG/L	5.0		U		1
PW-B	1,2-Dichlorobenzene	UG/L	1.0		U		1
PW-B	1,3-Dichlorobenzene	UG/L	1.0		U		1
PW-B	1,4-Dichlorobenzene	UG/L	1.0		U		1
PW-B	2,2'-oxybis(1-Chloropropane)	UG/L	5.0		U		5
PW-B	2,4,5-Trichlorophenol	UG/L	20		U		20
PW-B	2,4,6-Trichlorophenol	UG/L	5.0		U		5
PW-B	2,4-Dichlorophenol	UG/L	5.0		U		5
PW-B	2,4-Dimethylphenol	UG/L	5.0		U		5
PW-B	2,4-Dinitrophenol	UG/L	20		U		20
PW-B	2,4-Dinitrotoluene	UG/L	5.0		U		5
PW-B	2,6-Dinitrotoluene	UG/L	5.0		U		5
PW-B	2-Chloronaphthalene	UG/L	5.0		U		5
PW-B	2-Chlorophenol	UG/L	5.0		U		5
PW-B	2-Methylnaphthalene	UG/L	5.0		U		5
PW-B	2-Methylphenol	UG/L	5.0		U		5
PW-B	2-Nitroaniline	UG/L	20		U		20
PW-B	2-Nitrophenol	UG/L	5.0		U		5
PW-B	3,3'-Dichlorobenzidine	UG/L	5.0		U		5
PW-B	3-Nitroaniline	UG/L	20		U		20
PW-B	4,6-Dinitro-2-methylphenol	UG/L	20		U		20
PW-B	4-Bromophenyl-phenylether	UG/L	5.0		U		5
PW-B	4-Chloro-3-methylphenol	UG/L	5.0		U		5
PW-B	4-Chloroaniline	UG/L	5.0		U		5
PW-B	4-Chlorophenyl-phenyl ether	UG/L	5.0		U		5
PW-B	4-Methylphenol	UG/L	5.0		U		5
PW-B	4-Nitroaniline	UG/L	20		U		20

BOLD = Exceedance

NA = Not Applicable

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-B	4-Nitrophenol	UG/L	20		U		20
PW-B	Acenaphthene	UG/L	5.0		U		5
PW-B	Acenaphthylene	UG/L	5.0		U		5
PW-B	Anthracene	UG/L	5.0		U		5
PW-B	Benzo(a)anthracene	UG/L	5.0		U		5
PW-B	Benzo(a)pyrene	UG/L	5.0		U		5
PW-B	Benzo(b)fluoranthene	UG/L	5.0		U		5
PW-B	Benzo(g,h,i)perylene	UG/L	5.0		U		5
PW-B	Benzo(k)fluoranthene	UG/L	5.0		U		5
PW-B	Benzoic Acid	UG/L	NA		U		98
PW-B	Benzyl alcohol	UG/L	NA		U		5
PW-B	Bis(2-chloroethoxy)methane	UG/L	5.0		U		5
PW-B	bis(2-chloroethyl) ether	UG/L	5.0		U		5
PW-B	Bis(2-ethylhexyl)phthalate	UG/L	5.0		U		5
PW-B	Butylbenzylphthalate	UG/L	5.0		U		5
PW-B	Chrysene	UG/L	5.0		U		5
PW-B	Di-n-butylphthalate	UG/L	5.0		U		5
PW-B	Di-n-octylphthalate	UG/L	5.0		U		5
PW-B	Dibenzo(a,h)anthracene	UG/L	5.0		U		5
PW-B	Dibenzofuran	UG/L	5.0		U		5
PW-B	Diethylphthalate	UG/L	5.0		U		5
PW-B	Dimethylphthalate	UG/L	5.0		U		5
PW-B	Fluoranthene	UG/L	5.0		U		5
PW-B	Fluorene	UG/L	5.0		U	UJ	5
PW-B	Hexachlorobenzene	UG/L	5.0		U		5
PW-B	Hexachlorobutadiene	UG/L	5.0		U		5
PW-B	Hexachlorocyclopentadiene	UG/L	5.0		U		5
PW-B	Hexachloroethane	UG/L	5.0		U		5
PW-B	Indeno(1,2,3-cd)pyrene	UG/L	5.0		U		5
PW-B	Isophorone	UG/L	5.0		U		5
PW-B	N-Nitroso-di-n-propylamine	UG/L	5.0		U		5
PW-B	N-Nitrosodiphenylamine	UG/L	5.0		U		5
PW-B	Naphthalene	UG/L	5.0		U		5
PW-B	Nitrobenzene	UG/L	5.0		U		5
PW-B	Pentachlorophenol	UG/L	20		U		18
PW-B	Phenanthrene	UG/L	5.0		U		5
PW-B	Phenol	UG/L	5.0		U		5
PW-B	Pyrene	UG/L	5.0		U		5
PW-C	1,2,4-Trichlorobenzene	UG/L	5.0		U		1
PW-C	1,2-Dichlorobenzene	UG/L	1.0		U		1
PW-C	1,3-Dichlorobenzene	UG/L	1.0		U		1
PW-C	1,4-Dichlorobenzene	UG/L	1.0		U		1
PW-C	2,2'-oxybis(1-Chloropropane)	UG/L	5.0		U		5
PW-C	2,4,5-Trichlorophenol	UG/L	20		U		19
PW-C	2,4,6-Trichlorophenol	UG/L	5.0		U		5
PW-C	2,4-Dichlorophenol	UG/L	5.0		U		5

BOLD = Exceedance

NA = Not Applicable

Page 3

DMD/dmd

J:\1252042\Databases\1998\ACS GW.mdb\rptPWNewResultsSVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-C	2,4-Dimethylphenol	UG/L	5.0		U		5
PW-C	2,4-Dinitrophenol	UG/L	20		U		19
PW-C	2,4-Dinitrotoluene	UG/L	5.0		U		5
PW-C	2,6-Dinitrotoluene	UG/L	5.0		U		5
PW-C	2-Chloronaphthalene	UG/L	5.0		U		5
PW-C	2-Chlorophenol	UG/L	5.0		U		5
PW-C	2-Methylnaphthalene	UG/L	5.0		U		5
PW-C	2-Methylphenol	UG/L	5.0		U		5
PW-C	2-Nitroaniline	UG/L	20		U		19
PW-C	2-Nitrophenol	UG/L	5.0		U		5
PW-C	3,3'-Dichlorobenzidine	UG/L	5.0		U		5
PW-C	3-Nitroaniline	UG/L	20		U		19
PW-C	4,6-Dinitro-2-methylphenol	UG/L	20		U		19
PW-C	4-Bromophenyl-phenylether	UG/L	5.0		U		5
PW-C	4-Chloro-3-methylphenol	UG/L	5.0		U		5
PW-C	4-Chloroaniline	UG/L	5.0		U		5
PW-C	4-Chlorophenyl-phenyl ether	UG/L	5.0		U		5
PW-C	4-Methylphenol	UG/L	5.0		U		5
PW-C	4-Nitroaniline	UG/L	20		U		19
PW-C	4-Nitrophenol	UG/L	20		U		19
PW-C	Acenaphthene	UG/L	5.0		U		5
PW-C	Acenaphthylene	UG/L	5.0		U		5
PW-C	Anthracene	UG/L	5.0		U		5
PW-C	Benzo(a)anthracene	UG/L	5.0		U		5
PW-C	Benzo(a)pyrene	UG/L	5.0		U		5
PW-C	Benzo(b)fluoranthene	UG/L	5.0		U		5
PW-C	Benzo(g,h,i)perylene	UG/L	5.0		U		5
PW-C	Benzo(k)fluoranthene	UG/L	5.0		U		5
PW-C	Benzoic Acid	UG/L	NA		U		97
PW-C	Benzyl alcohol	UG/L	NA		U		5
PW-C	Bis(2-chloroethoxy)methane	UG/L	5.0		U		5
PW-C	bis(2-chloroethyl) ether	UG/L	5.0		U		5
PW-C	Bis(2-ethylhexyl)phthalate	UG/L	5.0		U		5
PW-C	Butylbenzylphthalate	UG/L	5.0		U		5
PW-C	Chrysene	UG/L	5.0		U		5
PW-C	Di-n-butylphthalate	UG/L	5.0		U		5
PW-C	Di-n-octylphthalate	UG/L	5.0		U		5
PW-C	Dibenzo(a,h)anthracene	UG/L	5.0		U		5
PW-C	Dibenzofuran	UG/L	5.0		U		5
PW-C	Diethylphthalate	UG/L	5.0		U		5
PW-C	Dimethylphthalate	UG/L	5.0		U		5
PW-C	Fluoranthene	UG/L	5.0		U		5
PW-C	Fluorene	UG/L	5.0		U	UJ	5
PW-C	Hexachlorobenzene	UG/L	5.0		U		5
PW-C	Hexachlorobutadiene	UG/L	5.0		U		5
PW-C	Hexachlorocyclopentadiene	UG/L	5.0		U		5

BOLD = Exceedance

NA = Not Applicable

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-C	Hexachloroethane	UG/L	5.0		U		5
PW-C	Indeno(1,2,3-cd)pyrene	UG/L	5.0		U		5
PW-C	Isophorone	UG/L	5.0		U		5
PW-C	N-Nitroso-di-n-propylamine	UG/L	5.0		U		5
PW-C	N-Nitrosodiphenylamine	UG/L	5.0		U		5
PW-C	Naphthalene	UG/L	5.0		U		5
PW-C	Nitrobenzene	UG/L	5.0		U		5
PW-C	Pentachlorophenol	UG/L	20		U		17
PW-C	Phenanthrene	UG/L	5.0		U		5
PW-C	Phenol	UG/L	5.0		U		5
PW-C	Pyrene	UG/L	5.0		U		5
PW-D	1,2,4-Trichlorobenzene	UG/L	5.0		U		1
PW-D	1,2-Dichlorobenzene	UG/L	5.0		U		1
PW-D	1,3-Dichlorobenzene	UG/L	5.0		U		1
PW-D	1,4-Dichlorobenzene	UG/L	5.0		U		1
PW-D	2,2'-oxybis(1-Chloropropane)	UG/L	5.0		U		5
PW-D	2,4,5-Trichlorophenol	UG/L	20		U		19
PW-D	2,4,6-Trichlorophenol	UG/L	5.0		U		5
PW-D	2,4-Dichlorophenol	UG/L	5.0		U		5
PW-D	2,4-Dimethylphenol	UG/L	5.0		U		5
PW-D	2,4-Dinitrophenol	UG/L	20		U		19
PW-D	2,4-Dinitrotoluene	UG/L	5.0		U		5
PW-D	2,6-Dinitrotoluene	UG/L	5.0		U		5
PW-D	2-Chloronaphthalene	UG/L	5.0		U		5
PW-D	2-Chlorophenol	UG/L	5.0		U		5
PW-D	2-Methylnaphthalene	UG/L	5.0		U		5
PW-D	2-Methylphenol	UG/L	5.0		U		5
PW-D	2-Nitroaniline	UG/L	20		U		19
PW-D	2-Nitrophenol	UG/L	5.0		U		5
PW-D	3,3'-Dichlorobenzidine	UG/L	5.0		U		5
PW-D	3-Nitroaniline	UG/L	20		U		19
PW-D	4,6-Dinitro-2-methylphenol	UG/L	20		U		19
PW-D	4-Bromophenyl-phenylether	UG/L	5.0		U		5
PW-D	4-Chloro-3-methylphenol	UG/L	5.0		U		5
PW-D	4-Chloroaniline	UG/L	5.0		U		5
PW-D	4-Chlorophenyl-phenyl ether	UG/L	5.0		U		5
PW-D	4-Methylphenol	UG/L	5.0		U		5
PW-D	4-Nitroaniline	UG/L	20		U		19
PW-D	4-Nitrophenol	UG/L	20		U		19
PW-D	Acenaphthene	UG/L	5.0		U		5
PW-D	Acenaphthylene	UG/L	5.0		U		5
PW-D	Anthracene	UG/L	5.0		U		5
PW-D	Benzo(a)anthracene	UG/L	5.0		U		5
PW-D	Benzo(a)pyrene	UG/L	5.0		U		5
PW-D	Benzo(b)fluoranthene	UG/L	5.0		U		5
PW-D	Benzo(g,h,i)perylene	UG/L	5.0		U		5

BOLDf = Exceedance

NA = Not Applicable

Page 5

DMD/dmd

J:\1252042\Databases\1998\ACS GW.mdb\rpt\PWNewResultsSVOC

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-D	Benzo(k)fluoranthene	UG/L	5.0		U		5
PW-D	Benzoic Acid	UG/L	NA		U		96
PW-D	Benzyl alcohol	UG/L	NA		U		5
PW-D	Bis(2-chloroethoxy)methane	UG/L	5.0		U		5
PW-D	bis(2-chloroethyl) ether	UG/L	5.0		U		5
PW-D	Bis(2-ethylhexyl)phthalate	UG/L	5.0		U		5
PW-D	Butylbenzylphthalate	UG/L	5.0		U		5
PW-D	Chrysene	UG/L	5.0		U		5
PW-D	Di-n-butylphthalate	UG/L	5.0		U		5
PW-D	Di-n-octylphthalate	UG/L	5.0		U		5
PW-D	Dibenzo(a,h)anthracene	UG/L	5.0		U		5
PW-D	Dibenzofuran	UG/L	5.0		U		5
PW-D	Diethylphthalate	UG/L	5.0		U		5
PW-D	Dimethylphthalate	UG/L	5.0		U		5
PW-D	Fluoranthene	UG/L	5.0		U		5
PW-D	Fluorene	UG/L	5.0		U	UJ	5
PW-D	Hexachlorobenzene	UG/L	5.0		U		5
PW-D	Hexachlorobutadiene	UG/L	5.0		U		5
PW-D	Hexachlorocyclopentadiene	UG/L	5.0		U		5
PW-D	Hexachloroethane	UG/L	5.0		U		5
PW-D	Indeno(1,2,3-cd)pyrene	UG/L	5.0		U		5
PW-D	Isophorone	UG/L	5.0		U		5
PW-D	N-Nitroso-di-n-propylamine	UG/L	5.0		U		5
PW-D	N-Nitrosodiphenylamine	UG/L	5.0		U		5
PW-D	Naphthalene	UG/L	5.0		U		5
PW-D	Nitrobenzene	UG/L	5.0		U		5
PW-D	Pentachlorophenol	UG/L	20		U		17
PW-D	Phenanthrene	UG/L	5.0		U		5
PW-D	Phenol	UG/L	5.0		U		5
PW-D	Pyrene	UG/L	5.0		U		5
PW-Y	1,2,4-Trichlorobenzene	UG/L	5.0		U		1
PW-Y	1,2-Dichlorobenzene	UG/L	5.0		U		1
PW-Y	1,3-Dichlorobenzene	UG/L	5.0		U		1
PW-Y	1,4-Dichlorobenzene	UG/L	5.0		U		1
PW-Y	2,2'-oxybis(1-Chloropropane)	UG/L	5.0		U		5
PW-Y	2,4,5-Trichlorophenol	UG/L	20		U		19
PW-Y	2,4,6-Trichlorophenol	UG/L	5.0		U		5
PW-Y	2,4-Dichlorophenol	UG/L	5.0		U		5
PW-Y	2,4-Dimethylphenol	UG/L	5.0		U		5
PW-Y	2,4-Dinitrophenol	UG/L	20		U		19
PW-Y	2,4-Dinitrotoluene	UG/L	5.0		U		5
PW-Y	2,6-Dinitrotoluene	UG/L	5.0		U		5
PW-Y	2-Chloronaphthalene	UG/L	5.0		U		5
PW-Y	2-Chlorophenol	UG/L	5.0		U		5
PW-Y	2-Methylnaphthalene	UG/L	5.0		U		5
PW-Y	2-Methylphenol	UG/L	5.0		U		5

BOED = Exceedance

NA = Not Applicable

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-Y	2-Nitroaniline	UG/L	20		U		19
PW-Y	2-Nitrophenol	UG/L	5.0		U		5
PW-Y	3,3'-Dichlorobenzidine	UG/L	5.0		U		5
PW-Y	3-Nitroaniline	UG/L	20		U		19
PW-Y	4,6-Dinitro-2-methylphenol	UG/L	20		U		19
PW-Y	4-Bromophenyl-phenylether	UG/L	5.0		U		5
PW-Y	4-Chloro-3-methylphenol	UG/L	5.0		U		5
PW-Y	4-Chloroaniline	UG/L	5.0		U		5
PW-Y	4-Chlorophenyl-phenyl ether	UG/L	5.0		U		5
PW-Y	4-Methylphenol	UG/L	5.0		U		5
PW-Y	4-Nitroaniline	UG/L	20		U		19
PW-Y	4-Nitrophenol	UG/L	20		U		19
PW-Y	Acenaphthene	UG/L	5.0		U		5
PW-Y	Acenaphthylene	UG/L	5.0		U		5
PW-Y	Anthracene	UG/L	5.0		U		5
PW-Y	Benzo(a)anthracene	UG/L	5.0		U		5
PW-Y	Benzo(a)pyrene	UG/L	5.0		U		5
PW-Y	Benzo(b)fluoranthene	UG/L	5.0		U		5
PW-Y	Benzo(g,h,i)perylene	UG/L	5.0		U		5
PW-Y	Benzo(k)fluoranthene	UG/L	5.0		U		5
PW-Y	Benzoic Acid	UG/L	NA		U		96
PW-Y	Benzyl alcohol	UG/L	NA		U		5
PW-Y	Bis(2-chloroethoxy)methane	UG/L	5.0		U		5
PW-Y	bis(2-chloroethyl) ether	UG/L	5.0		U		5
PW-Y	Bis(2-ethylhexyl)phthalate	UG/L	5.0		U		5
PW-Y	Butylbenzylphthalate	UG/L	5.0		U		5
PW-Y	Chrysene	UG/L	5.0		U		5
PW-Y	Di-n-butylphthalate	UG/L	5.0		U		5
PW-Y	Di-n-octylphthalate	UG/L	5.0		U		5
PW-Y	Dibenzo(a,h)anthracene	UG/L	5.0		U		5
PW-Y	Dibenzofuran	UG/L	5.0		U		5
PW-Y	Diethylphthalate	UG/L	5.0		U		5
PW-Y	Dimethylphthalate	UG/L	5.0		U		5
PW-Y	Fluoranthene	UG/L	5.0		U		5
PW-Y	Fluorene	UG/L	5.0		U	UJ	5
PW-Y	Hexachlorobenzene	UG/L	5.0		U		5
PW-Y	Hexachlorobutadiene	UG/L	5.0		U		5
PW-Y	Hexachlorocyclopentadiene	UG/L	5.0		U		5
PW-Y	Hexachloroethane	UG/L	5.0		U		5
PW-Y	Indeno(1,2,3-cd)pyrene	UG/L	5.0		U		5
PW-Y	Isophorone	UG/L	5.0		U		5
PW-Y	N-Nitroso-di-n-propylamine	UG/L	5.0		U		5
PW-Y	N-Nitrosodiphenylamine	UG/L	5.0		U		5
PW-Y	Naphthalene	UG/L	5.0		U		5
PW-Y	Nitrobenzene	UG/L	5.0		U		5
PW-Y	Pentachlorophenol	UG/L	20		U		17

BOLD = Exceedance

NA = Not Applicable

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-Y	Phenanthrene	UG/L	5.0		U		5
PW-Y	Phenol	UG/L	5.0		U		5
PW-Y	Pyrene	UG/L	5.0		U		5

BOLD = Exceedance

NA = Not Applicable

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-A	4,4'-DDD	UG/L	0.02		U		0.1
PW-A	4,4'-DDE	UG/L	0.02		U		0.1
PW-A	4,4'-DDT	UG/L	0.02		U		0.1
PW-A	Aldrin	UG/L	0.01		U		0.05
PW-A	alpha-BHC	UG/L	0.01		U		0.05
PW-A	alpha-Chlordane	UG/L	0.01	0.0018	J	J	0.005
PW-A	Aroclor-1016	UG/L	0.20		U		1
PW-A	Aroclor-1221	UG/L	0.40		U		2
PW-A	Aroclor-1232	UG/L	0.20		U		1
PW-A	Aroclor-1242	UG/L	0.20		U		1
PW-A	Aroclor-1248	UG/L	0.20		U		1
PW-A	Aroclor-1254	UG/L	0.20		U		1
PW-A	Aroclor-1260	UG/L	0.20		U		1
PW-A	beta-BHC	UG/L	0.01		U		0.05
PW-A	delta-BHC	UG/L	0.01		U		0.05
PW-A	Dieldrin	UG/L	0.02		U		0.1
PW-A	Endosulfan I	UG/L	0.01		U		0.05
PW-A	Endosulfan II	UG/L	0.02		U		0.1
PW-A	Endosulfan sulfate	UG/L	0.02		U		0.1
PW-A	Endrin	UG/L	0.02		U		0.1
PW-A	Endrin aldehyde	UG/L	0.02		U		0.1
PW-A	Endrin ketone	UG/L	0.02		U		0.1
PW-A	gamma-BHC	UG/L	0.01		U		0.05
PW-A	gamma-Chlordane	UG/L	0.01		U		0.05
PW-A	Heptachlor	UG/L	0.01		U		0.05
PW-A	Heptachlor epoxide	UG/L	0.01		U		0.05
PW-A	Methoxychlor	UG/L	0.10		U		0.5
PW-A	Toxaphene	UG/L	1.0		U		5
PW-B	4,4'-DDD	UG/L	0.02		U		0.098
PW-B	4,4'-DDE	UG/L	0.02		U		0.098
PW-B	4,4'-DDT	UG/L	0.02		U		0.098
PW-B	Aldrin	UG/L	0.01		U		0.049
PW-B	alpha-BHC	UG/L	0.01		U		0.049
PW-B	alpha-Chlordane	UG/L	0.01		U		0.049
PW-B	Aroclor-1016	UG/L	0.20		U		0.98
PW-B	Aroclor-1221	UG/L	0.40		U		2
PW-B	Aroclor-1232	UG/L	0.20		U		0.98
PW-B	Aroclor-1242	UG/L	0.20		U		0.98
PW-B	Aroclor-1248	UG/L	0.20		U		0.98
PW-B	Aroclor-1254	UG/L	0.20		U		0.98
PW-B	Aroclor-1260	UG/L	0.20		U		0.98
PW-B	beta-BHC	UG/L	0.01		U		0.049
PW-B	delta-BHC	UG/L	0.01		U		0.049
PW-B	Dieldrin	UG/L	0.02		U		0.098
PW-B	Endosulfan I	UG/L	0.01		U		0.049
PW-B	Endosulfan II	UG/L	0.02		U		0.098

BOLD = Exceedance

NA = Not Applicable

Page 1

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsPCB

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-B	Endosulfan sulfate	UG/L	0.02		U		0.098
PW-B	Endrin	UG/L	0.02		U		0.098
PW-B	Endrin aldehyde	UG/L	0.02	0.0025	JP	JP	0.01
PW-B	Endrin ketone	UG/L	0.02		U		0.098
PW-B	gamma-BHC	UG/L	0.01		U		0.049
PW-B	gamma-Chlordane	UG/L	0.01		U		0.049
PW-B	Heptachlor	UG/L	0.01		U		0.049
PW-B	Heptachlor epoxide	UG/L	0.01	0.0052	JP	JP	0.005
PW-B	Methoxychlor	UG/L	0.10		U		0.49
PW-B	Toxaphene	UG/L	1.0		U		4.9
PW-C	4,4'-DDD	UG/L	0.02		U		0.1
PW-C	4,4'-DDE	UG/L	0.02		U		0.1
PW-C	4,4'-DDT	UG/L	0.02		U		0.1
PW-C	Aldrin	UG/L	0.01		U		0.05
PW-C	alpha-BHC	UG/L	0.01		U		0.05
PW-C	alpha-Chlordane	UG/L	0.01		U		0.05
PW-C	Aroclor-1016	UG/L	0.20		U		1
PW-C	Aroclor-1221	UG/L	0.40		U		2
PW-C	Aroclor-1232	UG/L	0.20		U		1
PW-C	Aroclor-1242	UG/L	0.20		U		1
PW-C	Aroclor-1248	UG/L	0.20		U		1
PW-C	Aroclor-1254	UG/L	0.20		U		1
PW-C	Aroclor-1260	UG/L	0.20		U		1
PW-C	beta-BHC	UG/L	0.01		U		0.05
PW-C	delta-BHC	UG/L	0.01		U		0.05
PW-C	Dieldrin	UG/L	0.02		U		0.1
PW-C	Endosulfan I	UG/L	0.01		U		0.05
PW-C	Endosulfan II	UG/L	0.02		U		0.1
PW-C	Endosulfan sulfate	UG/L	0.02		U		0.1
PW-C	Endrin	UG/L	0.02		U		0.1
PW-C	Endrin aldehyde	UG/L	0.02		U		0.1
PW-C	Endrin ketone	UG/L	0.02		U		0.1
PW-C	gamma-BHC	UG/L	0.01		U		0.05
PW-C	gamma-Chlordane	UG/L	0.01		U		0.05
PW-C	Heptachlor	UG/L	0.01		U		0.05
PW-C	Heptachlor epoxide	UG/L	0.01		U		0.05
PW-C	Methoxychlor	UG/L	0.10		U		0.5
PW-C	Toxaphene	UG/L	1.0		U		5
PW-D	4,4'-DDD	UG/L	0.02		U		0.1
PW-D	4,4'-DDE	UG/L	0.02	0.011	JP	JP	0.01
PW-D	4,4'-DDT	UG/L	0.02		U		0.1
PW-D	Aldrin	UG/L	0.01		U		0.052
PW-D	alpha-BHC	UG/L	0.01		U		0.052
PW-D	alpha-Chlordane	UG/L	0.01		U		0.052
PW-D	Aroclor-1016	UG/L	0.20		U		1
PW-D	Aroclor-1221	UG/L	0.40		U		2.1

BOED = Exceedance

NA = Not Applicable

Page 2

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rpt\PWNewResultsPCB

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-D	Aroclor-1232	UG/L	0.20		U		1
PW-D	Aroclor-1242	UG/L	0.20		U		1
PW-D	Aroclor-1248	UG/L	0.20		U		1
PW-D	Aroclor-1254	UG/L	0.20		U		1
PW-D	Aroclor-1260	UG/L	0.20		U		1
PW-D	beta-BHC	UG/L	0.01		U		0.052
PW-D	delta-BHC	UG/L	0.01		U		0.052
PW-D	Dieldrin	UG/L	0.02		U		0.1
PW-D	Endosulfan I	UG/L	0.01		U		0.052
PW-D	Endosulfan II	UG/L	0.02		U		0.1
PW-D	Endosulfan sulfate	UG/L	0.02		U		0.1
PW-D	Endrin	UG/L	0.02		U		0.1
PW-D	Endrin aldehyde	UG/L	0.02		U		0.1
PW-D	Endrin ketone	UG/L	0.02		U		0.1
PW-D	gamma-BHC	UG/L	0.01		U		0.052
PW-D	gamma-Chlordane	UG/L	0.01		U		0.052
PW-D	Heptachlor	UG/L	0.01		U		0.052
PW-D	Heptachlor epoxide	UG/L	0.01		U		0.052
PW-D	Methoxychlor	UG/L	0.10		U		0.52
PW-D	Toxaphene	UG/L	1.0		U		5.2
PW-Y	4,4'-DDD	UG/L	NA		U		0.097
PW-Y	4,4'-DDE	UG/L	NA		U		0.097
PW-Y	4,4'-DDT	UG/L	NA		U		0.097
PW-Y	Aldrin	UG/L	NA		U		0.048
PW-Y	alpha-BHC	UG/L	NA	0.0014	JP	JP	0.005
PW-Y	alpha-Chlordane	UG/L	NA		U		0.048
PW-Y	Aroclor-1016	UG/L	NA		U		0.97
PW-Y	Aroclor-1221	UG/L	NA		U		1.9
PW-Y	Aroclor-1232	UG/L	NA		U		0.97
PW-Y	Aroclor-1242	UG/L	NA		U		0.97
PW-Y	Aroclor-1248	UG/L	NA		U		0.97
PW-Y	Aroclor-1254	UG/L	NA		U		0.97
PW-Y	Aroclor-1260	UG/L	NA		U		0.97
PW-Y	beta-BHC	UG/L	NA		U		0.048
PW-Y	delta-BHC	UG/L	NA		U		0.048
PW-Y	Dieldrin	UG/L	NA		U		0.097
PW-Y	Endosulfan I	UG/L	NA		U		0.048
PW-Y	Endosulfan II	UG/L	NA		U		0.097
PW-Y	Endosulfan sulfate	UG/L	NA		U		0.097
PW-Y	Endrin	UG/L	NA		U		0.097
PW-Y	Endrin aldehyde	UG/L	NA		U		0.097
PW-Y	Endrin ketone	UG/L	NA		U		0.097
PW-Y	gamma-BHC	UG/L	NA		U		0.048
PW-Y	gamma-Chlordane	UG/L	NA		U		0.048
PW-Y	Heptachlor	UG/L	NA		U		0.048
PW-Y	Heptachlor epoxide	UG/L	NA		U		0.048

BOLD = Exceedance

NA = Not Applicable

Page 3

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsPCB

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-Y	Methoxychlor	UG/L	NA		U		0.48
PW-Y	Toxaphene	UG/L	NA		U		4.8

BOLD = Exceedance

NA = Not Applicable

Page 4

DMD/dmd

J:\1252\042\Databases\1998\ACS GW.mdb\rptPWNewResultsPCB

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-A	Aluminum	UG/L	11		U		33.2
PW-A	Antimony	UG/L	1.0	3.3	B	J	1.8
PW-A	Arsenic	UG/L	2.0		U		2
PW-A	Barium	UG/L	119	110	B	J	0.2
PW-A	Beryllium	UG/L	1.0		U		0.1
PW-A	Cadmium	UG/L	1.0		U		0.5
PW-A	Calcium	UG/L	93,400	78,400		J	10.7
PW-A	Chromium (Total)	UG/L	1.0	1.9	B	J	0.9
PW-A	Cobalt	UG/L	1.0	1.1	B	J	0.6
PW-A	Copper	UG/L	4.8	3.2	B	J	1.1
PW-A	Cyanide (Total)	UG/L	10		U	UJ	2.8
PW-A	Iron	UG/L	2,870	2,310			18.9
PW-A	Lead	UG/L	1.0		U		1
PW-A	Magnesium	UG/L	43,500	38,400			7.7
PW-A	Manganese	UG/L	54	46.8			0.1
PW-A	Mercury	UG/L	0.20		U		0.02
PW-A	Nickel	UG/L	2.5	2.4	B	J	1
PW-A	Potassium	UG/L	1,860	1,580	B	J	61.8
PW-A	Selenium	UG/L	2.0		U		3.1
PW-A	Silver	UG/L	1.0	0.3	B	J	0.3
PW-A	Sodium	UG/L	15,600	16,200	E		212
PW-A	Thallium	UG/L	3.0		U		4.1
PW-A	Vanadium	UG/L	1.0	0.82	B	J	0.6
PW-A	Zinc	UG/L	121	62.2	E	J	1.1
PW-B	Aluminum	UG/L	19		U		33.2
PW-B	Antimony	UG/L	1.0		U		1.8
PW-B	Arsenic	UG/L	2.0		U		2
PW-B	Barium	UG/L	121	125	B	J	0.2
PW-B	Beryllium	UG/L	1.0		U		0.1
PW-B	Cadmium	UG/L	1.0		U		0.5
PW-B	Calcium	UG/L	91,200	87,600		J	10.7
PW-B	Chromium (Total)	UG/L	1.0	2.2	B	J	0.9
PW-B	Cobalt	UG/L	1.0		U		0.6
PW-B	Copper	UG/L	2.3	4	B	J	1.1
PW-B	Cyanide (Total)	UG/L	10		U	UJ	2.8
PW-B	Iron	UG/L	2,170	3,300			18.9
PW-B	Lead	UG/L	1.0		U		1
PW-B	Magnesium	UG/L	42,700	41,600			7.7
PW-B	Manganese	UG/L	56	59.6			0.1
PW-B	Mercury	UG/L	0.20		U		0.02
PW-B	Nickel	UG/L	3.3	3	B	J	1
PW-B	Potassium	UG/L	1,760	1,620	B	J	61.8
PW-B	Selenium	UG/L	2.0		U		3.1
PW-B	Silver	UG/L	1.0		U		0.3
PW-B	Sodium	UG/L	14,200	16,600	E		212

BOLD = Exceedance

NA = Not Applicable

Page 1

DMD/dmd/CAS

J:\1252042\Databases\1998\ACS GW.mdb[rptPWNewResultsInorg]

1252042.221601

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-B	Thallium	UG/L	3.0		U		4.1
PW-B	Vanadium	UG/L	1.0		U		0.6
PW-B	Zinc	UG/L	9.6	10.4	BE	J	1.1
PW-C	Aluminum	UG/L	25		U		33.2
PW-C	Antimony	UG/L	1.0	2	B		1.8
PW-C	Arsenic	UG/L	2.0		U		2
PW-C	Barium	UG/L	166	163	B	J	0.2
PW-C	Beryllium	UG/L	1.0		U		0.1
PW-C	Cadmium	UG/L	1.0		U		0.5
PW-C	Calcium	UG/L	93,200	84,400		J	10.7
PW-C	Chromium (Total)	UG/L	1.0	2.7	B	J	0.9
PW-C	Cobalt	UG/L	1.0		U	J	0.6
PW-C	Copper	UG/L	32	1.9	B	J	1.1
PW-C	Cyanide (Total)	UG/L	10		U	UJ	2.8
PW-C	Iron	UG/L	3,030	2,570			18.9
PW-C	Lead	UG/L	1.9		U		1
PW-C	Magnesium	UG/L	53,700	49,700			7.7
PW-C	Manganese	UG/L	35	33.4			0.1
PW-C	Mercury	UG/L	0.20		U		0.02
PW-C	Nickel	UG/L	1.0	2.3	B	J	1
PW-C	Potassium	UG/L	2,730	2,440	B	J	61.8
PW-C	Selenium	UG/L	2.0		U		3.1
PW-C	Silver	UG/L	1.0	0.99	B	J	0.3
PW-C	Sodium	UG/L	23,300	25,400	E		212
PW-C	Thallium	UG/L	3.0		U		4.1
PW-C	Vanadium	UG/L	1.0		U		0.6
PW-C	Zinc	UG/L	79	3.7	BE	J	1.1
PW-D	Aluminum	UG/L	125		U		33.2
PW-D	Antimony	UG/L	1.0	3.1	B	J	1.8
PW-D	Arsenic	UG/L	2.0	2.1	B	J	2
PW-D	Barium	UG/L	157	155	B	J	0.2
PW-D	Beryllium	UG/L	1.0		U		0.1
PW-D	Cadmium	UG/L	1.1		U		0.5
PW-D	Calcium	UG/L	96,800	94,200		J	10.7
PW-D	Chromium (Total)	UG/L	1.0	3.5	B	J	0.9
PW-D	Cobalt	UG/L	1.0		U		0.6
PW-D	Copper	UG/L	155	1,090			1.1
PW-D	Cyanide (Total)	UG/L	10		U		8.2
PW-D	Iron	UG/L	3,190	3,940			18.9
PW-D	Lead	UG/L	23	39.8			1
PW-D	Magnesium	UG/L	50,900	47,600			7.7
PW-D	Manganese	UG/L	48	43.4			0.1
PW-D	Mercury	UG/L	0.20		U		0.02
PW-D	Nickel	UG/L	4.3	74.6			1
PW-D	Potassium	UG/L	2,660	2,310	B	J	61.8

BOLD = Exceedance

NA = Not Applicable

Page 2

Comparison of Current Results to Baseline Detections
September 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-D	Selenium	UG/L	2.0		U		3.1
PW-D	Silver	UG/L	1.0	0.3	B	J	0.3
PW-D	Sodium	UG/L	24,100	21,100	E		212
PW-D	Thallium	UG/L	3.0		U		4.1
PW-D	Vanadium	UG/L	1.0		U		0.6
PW-D	Zinc	UG/L	1,580	1,180	E	J	1.1
PW-Y	Aluminum	UG/L	10		U		33.2
PW-Y	Antimony	UG/L	1.0		U		1.8
PW-Y	Arsenic	UG/L	2.0		U		2
PW-Y	Barium	UG/L	132	145	B	J	0.2
PW-Y	Beryllium	UG/L	1.0		U		0.1
PW-Y	Cadmium	UG/L	1.0		U		0.5
PW-Y	Calcium	UG/L	81,750	83,800		J	10.7
PW-Y	Chromium (Total)	UG/L	2.4	2.4	B	J	0.9
PW-Y	Cobalt	UG/L	1.0		U		0.6
PW-Y	Copper	UG/L	2.0	7.9	B	J	1.1
PW-Y	Cyanide (Total)	UG/L	10		U	UJ	2.8
PW-Y	Iron	UG/L	2,550	3,070			18.9
PW-Y	Lead	UG/L	1.0		U		1
PW-Y	Magnesium	UG/L	43,100	45,200			7.7
PW-Y	Manganese	UG/L	29	32.1			0.1
PW-Y	Mercury	UG/L	0.20		U		0.02
PW-Y	Nickel	UG/L	3.4	1.8	B	J	1
PW-Y	Potassium	UG/L	2,765	2,420	B	J	61.8
PW-Y	Selenium	UG/L	2.1		U		3.1
PW-Y	Silver	UG/L	1.0	0.51	B	J	0.3
PW-Y	Sodium	UG/L	23,300	24,100	E		212
PW-Y	Thallium	UG/L	2.3		U		4.1
PW-Y	Vanadium	UG/L	1.0		U		0.6
PW-Y	Zinc	UG/L	25	12.3	BE	J	1.1

BOLD = Exceedance

NA = Not Applicable

Page 3

DMD/dmd/CAS

J:\1252\042\Databases\1998\ACS GW.mdb[rptPWNewResultsInorg]

1252042.221601



APPENDIX B

TIME TREND PLOTS

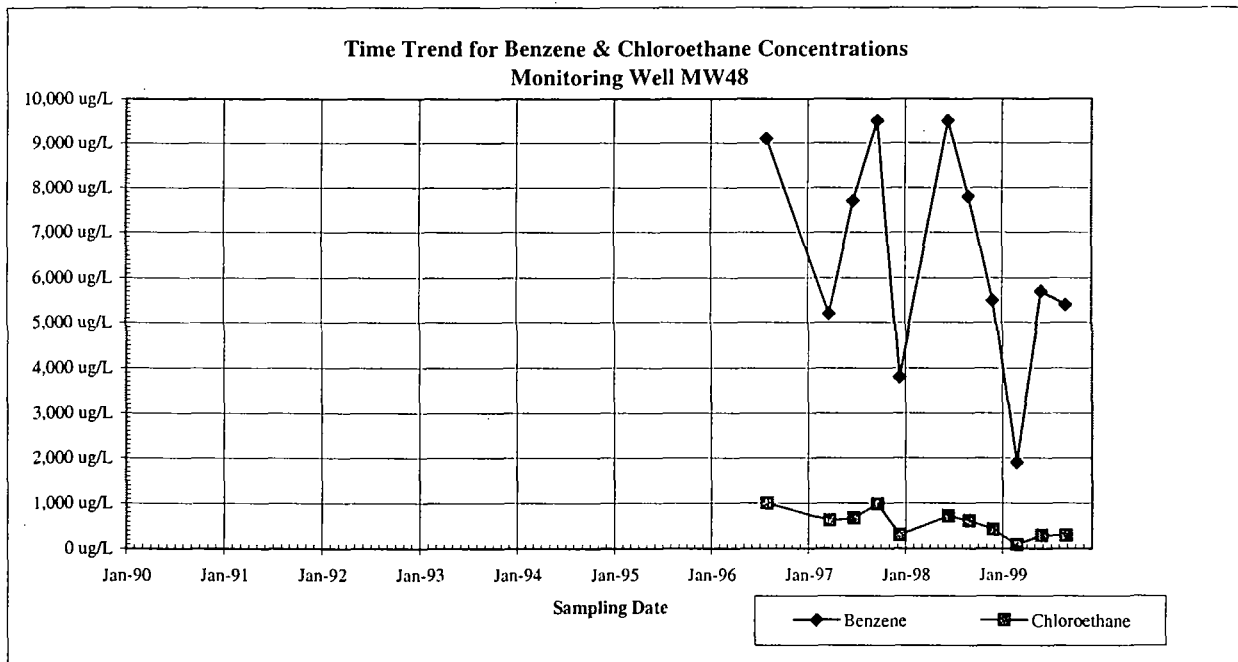
Upper Aquifer Monitoring Well: MW48

Baseline Groundwater Monitoring

ACS NPL Site

MW48

Date	Benzene	Chloroethane
Baseline	9500	1000
August-89		
May-90		
December-94		
August-96	9,100 ug/L	1,000 ug/L
March-97	5,200 ug/L	620 ug/L
June-97	7,700 ug/L	670 ug/L
September-97	9,500 ug/L	980 ug/L
December-97	3,800 ug/L	300 ug/L
June-98	9,500 ug/L	720 ug/L
September-98	7,800 ug/L	610 ug/L
December-98	5,500 ug/L	420 ug/L
March-99	1,900 ug/L	83 ug/L
June-99	5,700 ug/L	290 ug/L
September-99	5,400 ug/L	290 ug/L



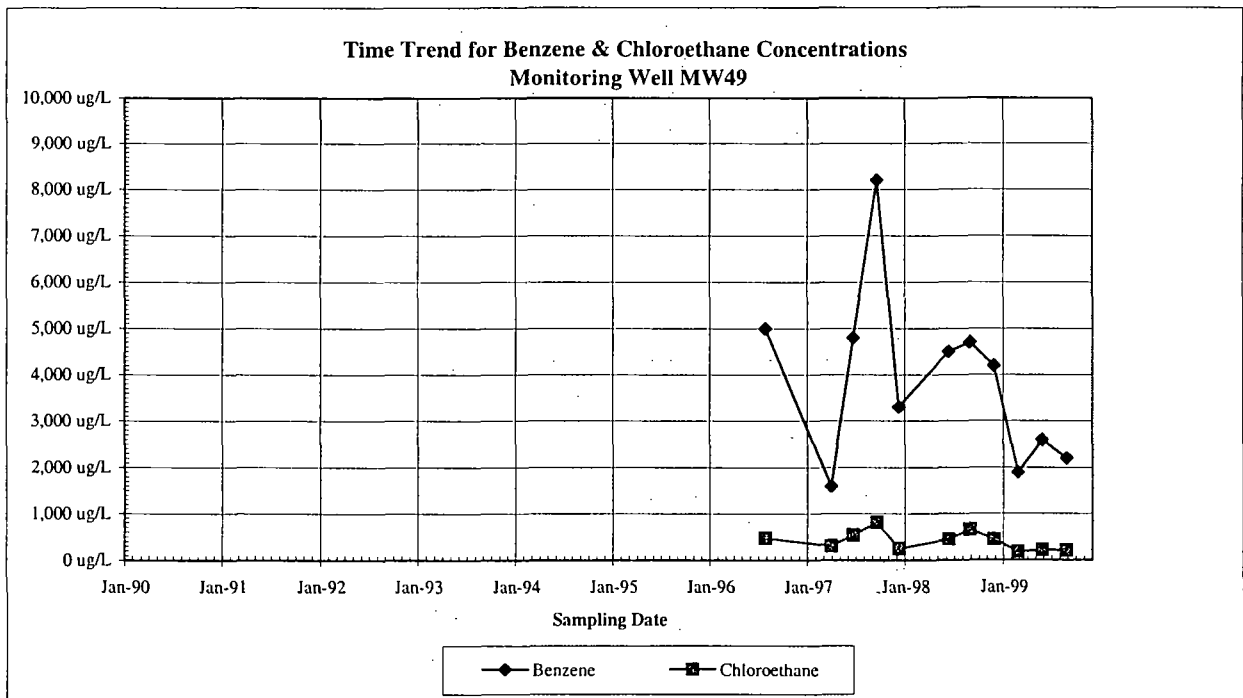
Upper Aquifer Monitoring Well: MW49

Baseline Groundwater Monitoring

ACS NPL Site

MW49

Date	Benzene	Chloroethane
Baseline	6750	715
August-89		
May-90		
December-94		
August-96	5,000 ug/L	480 ug/L
April-97	1,600 ug/L	310 ug/L
June-97	4,800 ug/L	540 ug/L
September-97	8,200 ug/L	810 ug/L
December-97	3,300 ug/L	250 ug/L
June-98	4,500 ug/L	450 ug/L
September-98	4,700 ug/L	650 ug/L
December-98	4,200 ug/L	440 ug/L
March-99	1,900 ug/L	180 ug/L
June-99	2,600 ug/L	220 ug/L
September-99	2,200 ug/L	210 ug/L



Lower Aquifer Monitoring Well: MW9/MW9R

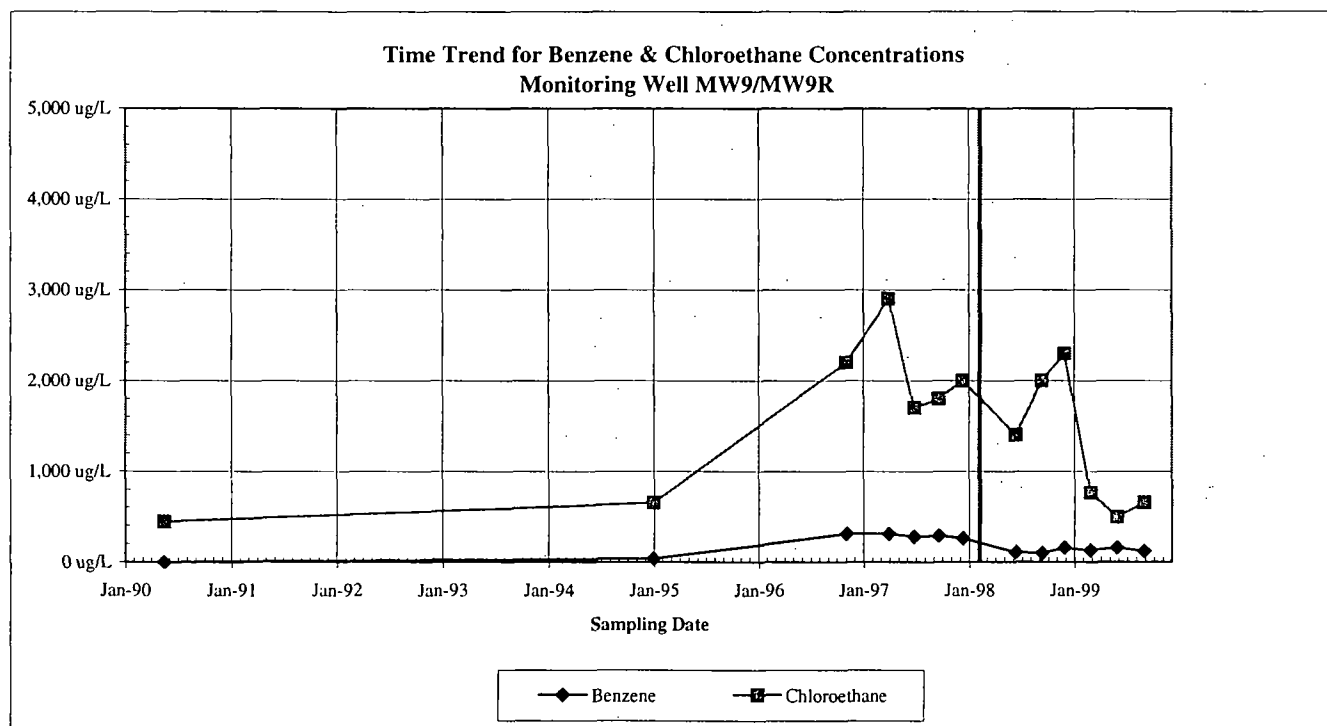
Baseline Groundwater Monitoring

ACS NPL Site

MW9/MW9R

Date	Benzene	Chloroethane
BASELINE	310	2900
August-89		
May-90	BDL	440 ug/L
January-95	40 ug/L	650 ug/L
November-96	310 ug/L	2,200 ug/L
April-97	310 ug/L	2,900 ug/L
June-97	280 ug/L	1,700 ug/L
September-97	290 ug/L	1,800 ug/L
December-97	260 ug/L	2,000 ug/L
June-98	110 ug/L	1,400 ug/L
September-98	100 ug/L	2,000 ug/L
December-98	160 ug/L	2,300 ug/L
March-99	130 ug/L	760 ug/L
June-99	160 ug/L	490 ug/L
September-99	120 ug/L	650 ug/L

BDL = Below the Detection Limit



Line indicates change to replacement well

Lower Aquifer Monitoring Well: MW10C/MW9R

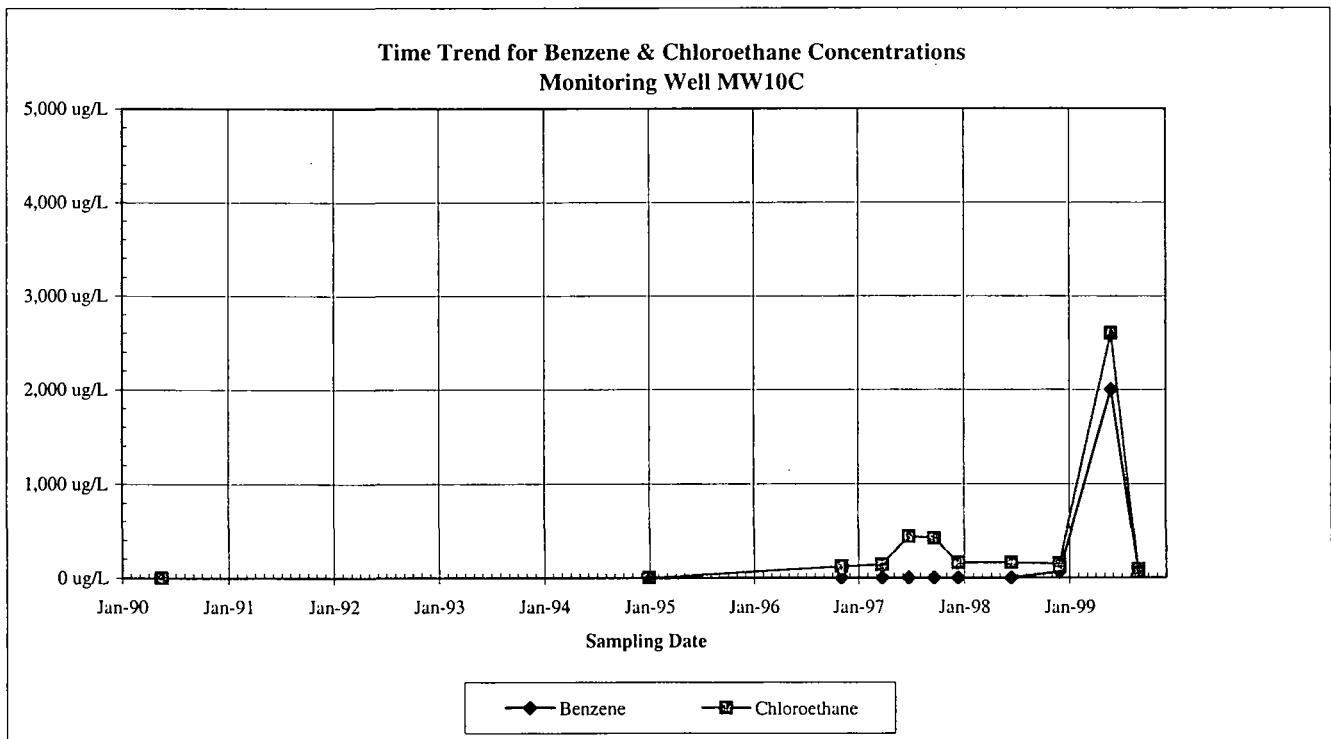
Baseline Groundwater Monitoring

ACS NPL Site

MW10C

Date	Benzene	Chloroethane
BASELINE	150	420
August-89		
May-90	BDL	BDL
January-95	BDL	BDL
November-96	BDL	120 ug/L
March-97	BDL	140 ug/L
June-97	BDL	440 ug/L
September-97	BDL	420 ug/L
December-97	BDL	160 ug/L
June-98	BDL	160 ug/L
December-98	66 ug/L	150 ug/L
June-99	2,000 ug/L	2,600 ug/L
September-99	83 ug/L	88 ug/L

BDL = Below the Detection Limit





APPENDIX C

**VALIDATION NARRATIVE AND LABORATORY REPORTS
FROM UPPER AQUIFER**

MEMORANDUM



MONTGOMERY WATSON

To: Chad Smith
From: Anne Koob, MW **Job No.:** 1252042.281601
Subject: Data Validation for American **SDG:** 00093 and 00095
Chemical Service (ACS). Griffith, Indiana.
Date: November 1, 1999

INTRODUCTION

The following text is based on the validation of water samples collected at American Chemical Service, Inc. in September of 1999.

Nine water samples and four field quality assurance samples were analyzed by CompuChem Laboratories, Cary, North Carolina for the following parameters:

- VOA's by CLP – OLM 3.0 (samples FB01, TB01, PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10, TB02-10, MW48-10, MW49-10, MW10C-10, MW9R-10)
- SVOA's by CLP – OLM 3.0 (samples PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10)
- Pesticides/PCB's by CLP – OLM 3.0 (samples PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10)
- Metals by CLP – ILM04.0 (samples FB01, PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10, MW48-10, MW49-10, MW10C-10, MW9R-10)
- Cyanide by CLP – ILM04.0 (samples PWC10, PWB10, ^{NS} ~~PWB10~~, PWA10, PWY10)

Data validation was conducted in accordance with procedures specified in *Pre-Design Activities Quality Assurance Project Plan* (MW, 1995), *National Functional Guidelines for Organic Data Review* (USEPA, 1994a), and *National Functional Guidelines for Inorganic Data Review* (USEPA, 1994b).

The following field quality control samples were collected during the October 1999 sampling round:

- One field blank: FB01; and
- Two trip blanks: TB01, and TB02-10.

This memorandum contains a narrative summarizing the data quality objectives specified in the work plan, and provides a table of qualified data (Table 1-1 and 1-2) and supporting validation documentation (Attachment A).

SUMMARY

This section describes the quality control parameters reviewed during validation, summarizes the data quality objectives as a result of the validation and provides a summary of the deficiencies and qualification applied. The following paragraphs describe deficiencies that were identified which resulted in qualification of the sample results. Each analysis is separated into sections for clarity.

Volatile Organic Compounds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Initial Calibration

- The SDG 00095 initial calibration (run on 9/17/99 at 1517) had several %RSDs and RRFs outside the control limits of $\pm 30\%$ RSD and 0.05RRF. These included:
 - Acetone RRF of 0.011
 - 2-Butanone RRF of 0.018
 - Trans-1,3-Dichloropropene %RSD of 30.3%
 - 2-Hexanone RRF of 0.042
 - 1,2-Dibromo-3-chloropropane RRF of 0.039, %RSD is 45.3%

All associated results were non-detect and associated practical quantitation limits (PQLs) were qualified as estimated "UJ".

Continuing Calibration

- The SDG 00093 continuing calibration (run on 9/21/99 at 2215) for chloroethane had a percent difference of 34.4%, exceeding the control limit of $\pm 30\%$ percent. All positive and nondetect results were qualified as estimated with a low bias.
- The SDG 00095 continuing calibration (run on 9/21/99 at 2033) had several %RSDs and RRFs outside the control limits of $\pm 30\%$ RSD and 0.05RRF. These included:
 - Acetone RRF of 0.009
 - 2-Butanone RRF of 0.016
 - 2-Hexanone RRF of 0.036
 - 1,2-Dibromo-3-chloropropane RRF of 0.036

All associated results were non-detect and associated PQLs were qualified as estimated "UJ".

Contaminants were detected below the CRDL in some blanks and the associated sample results were flagged "B", by the laboratory, to indicate the possibility of blank contamination. Because most detections in blanks were below reporting limits, blank contamination is not expected to affect data usability across the board. Samples with associated blank contamination (above the reporting limit) are noted in the table of qualified data.

Semi-Volatile Organic Compounds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Continuing Calibration

- The continuing calibration (run on 9/21/99 at 1615) had a percent difference for fluorene of 32.6, which exceeds the control limit of 25 percent. All affected samples were ND for fluorene; thus the PQLs were qualified as estimated "UJ".
- In addition, compounds 2,4-Dinitrophenol, 2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitroaniline, 4-Nitrophenol, 4,6-dinitro-2-methylphenol, pentachlorophenol and 2,4,6-tribromophenol (surrogate) required additional initial calibration points, 100 and 120 ng/2uL. Calibration was performed for 5, 10, 20, 50, and 80. No data were qualified due to this nonconformance.

Contaminants were detected below the CRDL in some blanks and the associated sample results were flagged "B", by the laboratory, to indicate the possibility of blank contamination. Because all detections in blanks were below reporting limits, blank contamination is not expected to affect data usability.

Pesticides / PCBs

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Surrogates

- The decachlorobiphenyl surrogate for PWB-10 were recovered high at 450% and 262% in columns 1 and 2, respectively. All positive results were qualified as estimated "J".

Contaminants were detected below the CRDL in some blanks and the associated sample results were flagged "B", by the laboratory, to indicate the possibility of blank contamination. Because all detections in blanks were below reporting limits, blank contamination is not expected to affect data usability.

Inorganics / Cyanide

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Continuing Calibration Blanks

- Several continuing calibration blanks (CCBs) had negative detections of calcium, and zinc indicating a possible negative bias in associated sample results. All associated positive results for those analytes were qualified as estimated "J", with a low bias, unless the bias was insignificant compared to the sample concentration. In the case of ND results, the PQL was qualified as estimated "UJ", with a low bias.

Several samples contained detected concentrations of target analytes at concentrations between the instrument detection limit (IDL) and the contract required detection limit (CRDL). These were qualified as "B" by the laboratory, but during the validation process these qualifications were changed to a "J" flag which indicates an estimate. Table 1-2 summarizes the affected samples and analytes.

DATA QUALITY OBJECTIVES

The following is a summary of the data quality objectives that were evaluated during the data validation process.

Reporting Limits: Reporting limits were met for all analyses with the following exception.

- For VOCs: Reporting limits were met with the exception of two necessary dilutions. Both the original and diluted sample results were included.
- For SVOCs: Reporting limits were met without exception. No dilutions were necessary.
- For Pesticides: Reporting limits were met without exception. No dilutions were necessary.
- For Metals and Cyanide: Reporting limits were met without exception. No dilutions were necessary.

Accuracy

Laboratory Control Sample: Validation of the LCS was performed for VOA, SVOA, and Pesticides analyses, as well as inorganic analyses. The LCS for the inorganic analyses were within control limits and analyzed at the correct frequency.

Surrogates: The surrogate results were within laboratory specified limits with the exceptions noted previously.

Matrix Spike / Matrix Spike Duplicate: The MS/MSD results were within laboratory specified limits without exception.

Precision

Field Duplicates: Field duplicate comparisons were made and did not result in any qualifications. Some RPDs were greater than 20 but the associated results were close to or below the reporting limit. The discrepancies were likely due to the greater uncertainty close to the reporting limit.

Laboratory Duplicate Sample: No laboratory duplicate analyses were performed in this SDG.

The overall results were acceptable, indicating that sampling and analytical precision objectives were met for the sampling event.

Completeness

The data package was complete for the requested analyses. No results were considered unusable. The completeness was 100 percent, which meets the completeness objective of 95 percent.

Representativeness:

Trip blanks TB01 and TB02-10 had no target analytes detected above the reporting limit for all analyses, indicating that the representativeness objectives for the sampling event were met.

The field blank FB01 had no target analytes detected above the reporting limit, for all analyses, indicating that the representativeness objectives for the sampling event were met.

Comparability:

All data were reported in similar units to facilitate comparison of results within the data packages. Samples arrived at the laboratory at 4°C, which is within the limits of 2-6°C. All holding times were met, indicating that the comparability objectives for the sampling event were met.

As a result of this evaluation, all data within this SDG for wells at American Chemical Service are of known and acceptable quality in relation to the DQOs of this project. Data are considered usable as qualified for the intended purposes. Table 1-1 summarizes the validation and laboratory qualifications for this sampling event.

REFERENCES

Pre-Design Activities Quality Assurance Project Plan, American Chemical Service, Inc. NPL Site, Griffith Indiana (MW, 1995).

National Functional Guidelines for Organic Data Review (USEPA, 1994a).

National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).

ATTACHMENT A

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
93	FB01	CLP VOA IND	Chloroethane	<10	ug/L	UJ	high	CCAL %D 34.4, high bias
93	TB01	CLP VOA IND	Chloroethane	<10	ug/L	UJ	high	CCAL %D 34.4, high bias
95	PWB10	CLP PESTICIDE	Heptachlor Epoxide	0.0052	ug/L	JP	high	Decachlorobiphenyl surrogate recovered at 450% (column 1) and 262% (column 2), UCL is 150%. Second column confirmation difference >25%
95		CLP PESTICIDE	Endrin Aldehyde	0.0025	ug/L	JP	high	Decachlorobiphenyl surrogate recovered at 450% (column 1) and 262% (column 2), UCL is 150%. Second column confirmation difference >25%
95	PWA10	CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Methylene Chloride	1.00	ug/L	JB	NDT	Detected between MDL and CRDL, blank contamination suspected.
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	78,400	ug/L	J	low	ICB conc of -56.98, CCB conc of 29.46, prep blank conc of -37.3
		ICP Metals	Zinc	62.2	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38
			Antimony	3.3	ug/L	J	NDT	Detected between MDL and CRDL
			Barium	110	ug/L	J	NDT	Detected between MDL and CRDL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWB10	CLP PESTICIDE	Chromium	1.9	ug/L	J	NDT	Detected between MDL and CRDL
			Cobalt	1.1	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	3.2	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	2.4	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	1580	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.3	ug/L	J	NDT	Detected between MDL and CRDL
			Vanadium	0.82	ug/L	J	NDT	Detected between MDL and CRDL
			alpha-Chlordane	0.0018	ug/L	J	NDT	Detected between MDL and CRDL
		CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Methylene Chloride	1.00	ug/L	JB	NDT	Detected between MDL and CRDL, blank contamination suspected.
		CLP SVOA	Toluene	0.10	ug/L	J	NDT	Detected between MDL and CRDL
			Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	87,600	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
		ICP Metals	Zinc	10.4	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Barium	125	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.2	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	4	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	3	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	1620	ug/L	J	NDT	Detected between MDL and CRDL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWB10D	CLP PESTICIDE	Heptachlor epoxide	0.0052	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
			Endrin aldehyde	0.0025	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
		CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Methylene Chloride	4.00	ug/L	B.	NDT	Detected between MDL and CRDL, blank contamination suspected.
			Toluene	0.20	ug/L	J	NDT	Detected between MDL and CRDL
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	85,500	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
		ICP Metals	Zinc	16.4	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Barium	122	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.9	ug/L	J	NDT	Detected between MDL and CRDL
			Cobalt	0.91	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	6.6	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	3.2	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	1600	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	1.1	ug/L	J	NDT	Detected between MDL and CRDL
			Vanadium	0.81	ug/L	J	NDT	Detected between MDL and CRDL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWC10	CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Toluene	1.00	ug/L	JB	NDT	Detected between MDL and CRDL, blank contamination suspected.
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	84,440	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
		ICP Metals	Zinc	3.7	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Antimony	2				
			Barium	163	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.7	ug/L	J	NDT	Detected between MDL and CRDL
			Cobalt		ug/L	J	NDT	Detected between MDL and CRDL
			Copper	1.9	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	2.3	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	2440	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.99	ug/L	J	NDT	Detected between MDL and CRDL
			Zinc	3.7	ug/L	J	NDT	Detected between MDL and CRDL
95	PWD10	CLP VOA	Acetone	<5	ug/L	UJ	NDT	ICAL RRF is 0.011, CCAL RRF is 0.011
			2-Butanone	<5	ug/L	UJ	NDT	ICAL RRF is 0.018, CCAL RRF is 0.018
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	high	ICAL RRF is 0.042, CCAL RRF is 0.044

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWY10	CLP SVOA CYANIDE ICP Metals ICP Metals	1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	high	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.040
			Toluene	0.20	ug/L	J	NDT	Detected between MDL and CRDL
			Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
			Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
			Calcium	94,200	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
			Zinc	1180	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38
			Antimony	3.1	ug/L	J	NDT	Detected between MDL and CRDL
			Arsenic	2.1	ug/L	J	NDT	Detected between MDL and CRDL
			Barium	155	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	3.5	ug/L	J	NDT	Detected between MDL and CRDL
		CLP PESTICIDE	Potassium	2310	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.3	ug/L	J	NDT	Detected between MDL and CRDL
			4,4'-DDE	0.011	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
		CLP VOA	Acetone	<5	ug/L	UJ	NDT	ICAL RRF is 0.011, CCAL RRF is 0.011
			2-Butanone	<5	ug/L	UJ	NDT	ICAL RRF is 0.018, CCAL RRF is 0.018
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	high	ICAL RRF is 0.042, CCAL RRF is 0.044
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	high	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.040
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	83,800	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
		ICP Metals	Zinc	12.3	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Barium	145	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.4	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	7.9	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	1.8	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	2420	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.51	ug/L	J	NDT	Detected between MDL and CRDL
			Zinc	12.3	ug/L	J	NDT	Detected between MDL and CRDL
		CLP PESTICIDE	alpha-BHC	0.0014	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
93	MW48-10DL	CLP VOA	Chloroethane	290	ug/L	DJ	NDT	Analysis of diluted sample produced result between MDL and CRDL
93	MW49-10	CLP VOA	Chloroethane	210	ug/L	J	NDT	Result between MDL and CRDL
93	MW48-10	ICP Metals Ind	Arsenic	6.6	ug/L	J	NDT	Result between MDL and CRDL
			Lead	1.3	ug/L	J	NDT	Result between MDL and CRDL
93	MW9R-10	ICP Metals Ind	Arsenic	2.1	ug/L	J	NDT	Result between MDL and CRDL

Notes:

J - Estimated

MDL - Method detection limit

MS/MSD - Matrix Spike/Matrix Spike Duplicate

ug/L - Micrograms per liter

ACS SDG 00095
Duplicate Comparisons

	PWB10	PWB10D	RPD
Metals	ug/L	ug/L	
Barium	125	122	2.43%
Calcium	87,600	85,500	2.43%
Chromium	2	2.9	27.45%
Cobalt	ND	0.9	NA
Copper	4	6.6	49.06%
Iron	3,300	3,060	7.55%
Magnesium	41,600	40,500	2.68%
Manganese	59.6	57.6	3.41%
Nickel	3	3.2	6.45%
Potassium	1,620	1,600	1.24%
Sodium	16,600	16,400	1.21%
Zinc	10.4	16.4	44.78%
VOCs			
Methylene Chloride	1	4	120.00%
Toluene	0.1	0.2	66.67%
SVOCs	All ND	All ND	NA
Pesticides	2 hits, JP flagged	All ND	NA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW48-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959159

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: CN059159A54

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/25/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	250	E
75-35-4-----	1,1-Dichloroethene	10	U
71-55-6-----	1,1,1-Trichloroethane	10	U
79-01-6-----	Trichloroethene	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	580	E
127-18-4-----	Tetrachloroethene	10	U
156-60-5-----	trans-1,2-Dichloroethene	10	U
156-59-2-----	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW48-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959159

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: cn059159a54

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/25/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 352-93-2	DIETHYL SULFIDE	14.75	19	NJ
2. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	22.21	19	NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW48-10DL

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959159

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: C3R59159A51

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/29/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 33.3

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

75-01-4-----	Vinyl Chloride	330	U
75-00-3-----	Chloroethane	290	DJ
75-35-4-----	1,1-Dichloroethene	330	U
71-55-6-----	1,1,1-Trichloroethane	330	U
79-01-6-----	Trichloroethene	330	U
79-00-5-----	1,1,2-Trichloroethane	330	U
71-43-2-----	Benzene	5400	D
127-18-4-----	Tetrachloroethene	330	U
156-60-5-----	trans-1,2-Dichloroethene	330	U
156-59-2-----	cis-1,2-Dichloroethene	330	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW48-10DL

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959159

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: c3r59159a51

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/29/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 33.3

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1
INORGANIC ANALYSES DATA SHEET

MW48-10

Contract: ILM04.0

SDG No.: 00093

Lab Sample ID: 959159

Date Received: 09/21/99

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Texture:

Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW49-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959160

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: C3R59160A51

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/29/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 25.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

75-01-4-----	Vinyl Chloride	250	U
75-00-3-----	Chloroethane	210	J
75-35-4-----	1,1-Dichloroethene	250	U
71-55-6-----	1,1,1-Trichloroethane	250	U
79-01-6-----	Trichloroethene	250	U
79-00-5-----	1,1,2-Trichloroethane	250	U
71-43-2-----	Benzene	2200	
127-18-4-----	Tetrachloroethene	250	U
156-60-5-----	trans-1,2-Dichloroethene	250	U
156-59-2-----	cis-1,2-Dichloroethene	250	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW49-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959160

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: c3r59160a51

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/29/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 25.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW49-10

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00093

Matrix (soil/water): WATER Lab Sample ID: 959160

Level (low/med): LOW Date Received: 09/21/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

[illegible]

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



APPENDIX D

**VALIDATION NARRATIVE AND LABORATORY REPORTS FROM LOWER
AQUIFER**

MEMORANDUM



MONTGOMERY WATSON

To: Chad Smith
From: Anne Koob, MW **Job No.:** 1252042.281601
Subject: Data Validation for American **SDG:** 00093 and 00095
Chemical Service (ACS). Griffith, Indiana.
Date: November 1, 1999

INTRODUCTION

The following text is based on the validation of water samples collected at American Chemical Service, Inc. in September of 1999.

Nine water samples and four field quality assurance samples were analyzed by CompuChem Laboratories, Cary, North Carolina for the following parameters:

- VOA's by CLP – OLM 3.0 (samples FB01, TB01, PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10, TB02-10, MW48-10, MW49-10, MW10C-10, MW9R-10)
- SVOA's by CLP – OLM 3.0 (samples PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10)
- Pesticides/PCB's by CLP – OLM 3.0 (samples PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10)
- Metals by CLP – ILM04.0 (samples FB01, PWC10, PWB10, PWB10Dup, PWD10, PWA10, PWY10, MW48-10, MW49-10, MW10C-10, MW9R-10)
- Cyanide by CLP – ILM04.0 (samples PWC10, PWB10, ^{NS} ~~PWD10~~, PWA10, PWY10)

Data validation was conducted in accordance with procedures specified in *Pre-Design Activities Quality Assurance Project Plan (MW, 1995)*, *National Functional Guidelines for Organic Data Review (USEPA, 1994a)*, and *National Functional Guidelines for Inorganic Data Review (USEPA, 1994b)*.

The following field quality control samples were collected during the October 1999 sampling round:

- One field blank: FB01; and
- Two trip blanks: TB01, and TB02-10.

This memorandum contains a narrative summarizing the data quality objectives specified in the work plan, and provides a table of qualified data (Table 1-1 and 1-2) and supporting validation documentation (Attachment A).

SUMMARY

This section describes the quality control parameters reviewed during validation, summarizes the data quality objectives as a result of the validation and provides a summary of the deficiencies and qualification applied. The following paragraphs describe deficiencies that were identified which resulted in qualification of the sample results. Each analysis is separated into sections for clarity.

Volatile Organic Compounds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Initial Calibration

- The SDG 00095 initial calibration (run on 9/17/99 at 1517) had several %RSDs and RRFs outside the control limits of $\pm 30\%$ RSD and 0.05RRF. These included:
 - Acetone RRF of 0.011
 - 2-Butanone RRF of 0.018
 - Trans-1,3-Dichloropropene %RSD of 30.3%
 - 2-Hexanone RRF of 0.042
 - 1,2-Dibromo-3-chloropropane RRF of 0.039, %RSD is 45.3%

All associated results were non-detect and associated practical quantitation limits (PQLs) were qualified as estimated "UJ".

Continuing Calibration

- The SDG 00093 continuing calibration (run on 9/21/99 at 2215) for chloroethane had a percent difference of 34.4%, exceeding the control limit of ± 30 percent. All positive and nondetect results were qualified as estimated with a low bias.
- The SDG 00095 continuing calibration (run on 9/21/99 at 2033) had several %RSDs and RRFs outside the control limits of $\pm 30\%$ RSD and 0.05RRF. These included:
 - Acetone RRF of 0.009
 - 2-Butanone RRF of 0.016
 - 2-Hexanone RRF of 0.036
 - 1,2-Dibromo-3-chloropropane RRF of 0.036

All associated results were non-detect and associated PQLs were qualified as estimated "UJ".

Contaminants were detected below the CRDL in some blanks and the associated sample results were flagged "B", by the laboratory, to indicate the possibility of blank contamination. Because most detections in blanks were below reporting limits, blank contamination is not expected to affect data usability across the board. Samples with associated blank contamination (above the reporting limit) are noted in the table of qualified data.

Semi-Volatile Organic Compounds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Continuing Calibration

- The continuing calibration (run on 9/21/99 at 1615) had a percent difference for fluorene of 32.6, which exceeds the control limit of 25 percent. All affected samples were ND for fluorene; thus the PQLs were qualified as estimated "UJ".
- In addition, compounds 2,4-Dinitrophenol, 2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitroaniline, 4-Nitrophenol, 4,6-dinitro-2-methylphenol, pentachlorophenol and 2,4,6-tribromophenol (surrogate) required additional initial calibration points, 100 and 120 ng/2uL. Calibration was performed for 5, 10, 20, 50, and 80. No data were qualified due to this nonconformance.

Contaminants were detected below the CRDL in some blanks and the associated sample results were flagged "B", by the laboratory, to indicate the possibility of blank contamination. Because all detections in blanks were below reporting limits, blank contamination is not expected to affect data usability.

Pesticides / PCBs

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Surrogates

- The decachlorobiphenyl surrogate for PWB-10 were recovered high at 450% and 262% in columns 1 and 2, respectively. All positive results were qualified as estimated "J".

Contaminants were detected below the CRDL in some blanks and the associated sample results were flagged "B", by the laboratory, to indicate the possibility of blank contamination. Because all detections in blanks were below reporting limits, blank contamination is not expected to affect data usability.

Inorganics / Cyanide

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Continuing Calibration Blanks

- Several continuing calibration blanks (CCBs) had negative detections of calcium, and zinc indicating a possible negative bias in associated sample results. All associated positive results for those analytes were qualified as estimated "J", with a low bias, unless the bias was insignificant compared to the sample concentration. In the case of ND results, the PQL was qualified as estimated "UJ", with a low bias.

Several samples contained detected concentrations of target analytes at concentrations between the instrument detection limit (IDL) and the contract required detection limit (CRDL). These were qualified as "B" by the laboratory, but during the validation process these qualifications were changed to a "J" flag which indicates an estimate. Table 1-2 summarizes the affected samples and analytes.

DATA QUALITY OBJECTIVES

The following is a summary of the data quality objectives that were evaluated during the data validation process.

Reporting Limits: Reporting limits were met for all analyses with the following exception.

- For VOCs: Reporting limits were met with the exception of two necessary dilutions. Both the original and diluted sample results were included.
- For SVOCs: Reporting limits were met without exception. No dilutions were necessary.
- For Pesticides: Reporting limits were met without exception. No dilutions were necessary.
- For Metals and Cyanide: Reporting limits were met without exception. No dilutions were necessary.

Accuracy

Laboratory Control Sample: Validation of the LCS was performed for VOA, SVOA, and Pesticides analyses, as well as inorganic analyses. The LCS for the inorganic analyses were within control limits and analyzed at the correct frequency.

Surrogates: The surrogate results were within laboratory specified limits with the exceptions noted previously.

Matrix Spike / Matrix Spike Duplicate: The MS/MSD results were within laboratory specified limits without exception.

Precision

Field Duplicates: Field duplicate comparisons were made and did not result in any qualifications. Some RPDs were greater than 20 but the associated results were close to or below the reporting limit. The discrepancies were likely due to the greater uncertainty close to the reporting limit.

Laboratory Duplicate Sample: No laboratory duplicate analyses were performed in this SDG.

The overall results were acceptable, indicating that sampling and analytical precision objectives were met for the sampling event.

Completeness

The data package was complete for the requested analyses. No results were considered unusable. The completeness was 100 percent, which meets the completeness objective of 95 percent.

Representativeness:

Trip blanks TB01 and TB02-10 had no target analytes detected above the reporting limit for all analyses, indicating that the representativeness objectives for the sampling event were met.

The field blank FB01 had no target analytes detected above the reporting limit, for all analyses, indicating that the representativeness objectives for the sampling event were met.

Comparability:

All data were reported in similar units to facilitate comparison of results within the data packages. Samples arrived at the laboratory at 4°C, which is within the limits of 2-6°C. All holding times were met, indicating that the comparability objectives for the sampling event were met.

As a result of this evaluation, all data within this SDG for wells at American Chemical Service are of known and acceptable quality in relation to the DQOs of this project. Data are considered usable as qualified for the intended purposes. Table 1-1 summarizes the validation and laboratory qualifications for this sampling event.

REFERENCES

Pre-Design Activities Quality Assurance Project Plan. American Chemical Service, Inc. NPL Site, Griffith Indiana (MW, 1995).

National Functional Guidelines for Organic Data Review (USEPA, 1994a).

National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).

ATTACHMENT A

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
93	FB01	CLP VOA IND	Chloroethane	<10	ug/L	UJ	high	CCAL %D 34.4, high bias
93	TB01	CLP VOA IND	Chloroethane	<10	ug/L	UJ	high	CCAL %D 34.4, high bias
95	PWB10	CLP PESTICIDE	Heptachlor Epoxide	0.0052	ug/L	JP	high	Decachlorobiphenyl surrogate recovered at 450% (column 1) and 262% (column 2), UCL is 150%. Second column confirmation difference >25%
95		CLP PESTICIDE	Endrin Aldehyde	0.0025	ug/L	JP	high	Decachlorobiphenyl surrogate recovered at 450% (column 1) and 262% (column 2), UCL is 150%. Second column confirmation difference >25%
95	PWA10	CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Methylene Chloride	1.00	ug/L	JB	NDT	Detected between MDL and CRDL, blank contamination suspected.
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	78,400	ug/L	J	low	ICB conc of -56.98, CCB conc of 29.46, prep blank conc of -37.3
		ICP Metals	Zinc	62.2	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38
			Antimony	3.3	ug/L	J	NDT	Detected between MDL and CRDL
			Barium	110	ug/L	J	NDT	Detected between MDL and CRDL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWB10	CLP VOA	Chromium	1.9	ug/L	J	NDT	Detected between MDL and CRDL
			Cobalt	1.1	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	3.2	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	2.4	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	1580	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.3	ug/L	J	NDT	Detected between MDL and CRDL
			Vanadium	0.82	ug/L	J	NDT	Detected between MDL and CRDL
			alpha-Chlordane	0.0018	ug/L	J	NDT	Detected between MDL and CRDL
		CLP PESTICIDE						
		CLP SVOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Methylene Chloride	1.00	ug/L	JB	NDT	Detected between MDL and CRDL, blank contamination suspected.
			Toluene	0.10	ug/L	J	NDT	Detected between MDL and CRDL
			Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	87,600	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
		ICP Metals	Zinc	10.4	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Barium	125	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.2	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	4	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	3	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	1620	ug/L	J	NDT	Detected between MDL and CRDL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWB10D	CLP PESTICIDE	Heptachlor epoxide	0.0052	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
			Endrin aldehyde	0.0025	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
		CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Methylene Chloride	4.00	ug/L	B	NDT	Detected between MDL and CRDL, blank contamination suspected.
			Toluene	0.20	ug/L	J	NDT	Detected between MDL and CRDL
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	85,500	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
		ICP Metals	Zinc	16.4	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Barium	122	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.9	ug/L	J	NDT	Detected between MDL and CRDL
			Cobalt	0.91	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	6.6	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	3.2	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	1600	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	1.1	ug/L	J	NDT	Detected between MDL and CRDL
			Vanadium	0.81	ug/L	J	NDT	Detected between MDL and CRDL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWC10	CLP VOA	Acetone	<5	ug/L	UJ	low	ICAL RRF is 0.011, CCAL RRF is 0.009
			2-Butanone	<5	ug/L	UJ	low	ICAL RRF is 0.018, CCAL RRF is 0.016
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	low	ICAL RRF is 0.042, CCAL is 0.036
			1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	low	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.036
			Toluene	1.00	ug/L	JB	NDT	Detected between MDL and CRDL, blank contamination suspected.
		CLP SVOA	Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
		CYANIDE	Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	84,440	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
		ICP Metals	Zinc	3.7	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Antimony	2				
			Barium	163	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.7	ug/L	J	NDT	Detected between MDL and CRDL
			Cobalt		ug/L	J	NDT	Detected between MDL and CRDL
			Copper	1.9	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	2.3	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	2440	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.99	ug/L	J	NDT	Detected between MDL and CRDL
			Zinc	3.7	ug/L	J	NDT	Detected between MDL and CRDL
95	PWD10	CLP VOA	Acetone	<5	ug/L	UJ	NDT	ICAL RRF is 0.011, CCAL RRF is 0.011
			2-Butanone	<5	ug/L	UJ	NDT	ICAL RRF is 0.018, CCAL RRF is 0.018
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	high	ICAL RRF is 0.042, CCAL RRF is 0.044

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
95	PWY10	CLP SVOA CYANIDE ICP Metals ICP Metals	1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	high	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.040
			Toluene	0.20	ug/L	J	NDT	Detected between MDL and CRDL
			Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
			Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
			Calcium	94,200	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3
			Zinc	1180	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38
			Antimony	3.1	ug/L	J	NDT	Detected between MDL and CRDL
			Arsenic	2.1	ug/L	J	NDT	Detected between MDL and CRDL
			Barium	155	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	3.5	ug/L	J	NDT	Detected between MDL and CRDL
		CLP PESTICIDE	Potassium	2310	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.3	ug/L	J	NDT	Detected between MDL and CRDL
			4,4'-DDE	0.011	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
		CLP VOA	Acetone	<5	ug/L	UJ	NDT	ICAL RRF is 0.011, CCAL RRF is 0.011
			2-Butanone	<5	ug/L	UJ	NDT	ICAL RRF is 0.018, CCAL RRF is 0.018
			trans-1,3-Dichloropropene	<1	ug/L	UJ	NDT	ICAL %RSD is 30.3%
			2-Hexanone	<5	ug/L	UJ	high	ICAL RRF is 0.042, CCAL RRF is 0.044
		CLP SVOA CYANIDE	1,2-Dibromo-3-chloropropane	<1	ug/L	UJ	high	ICAL RRF is 0.039, and %RSD is 45.3, CCAL RRF is 0.040
			Fluorene	<5	ug/L	UJ	low	CCAL %D is 32.6, low bias
			Cyanide	<2.8	ug/L	UJ	NDT	ICAL %R is 115.1%, which is above the UCL of 115%
		ICP Metals	Calcium	83,800	ug/L	J	low	ICB conc of -56.98, CCB conc of -29.46, prep blank conc of -37.3

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
		ICP Metals	Zinc	12.3	ug/L	J	low	ICB conc of -4.60, CCB conc of -4.38, detected between MDL and CRDL.
			Barium	145	ug/L	J	NDT	Detected between MDL and CRDL
			Chromium	2.4	ug/L	J	NDT	Detected between MDL and CRDL
			Copper	7.9	ug/L	J	NDT	Detected between MDL and CRDL
			Nickel	1.8	ug/L	J	NDT	Detected between MDL and CRDL
			Potassium	2420	ug/L	J	NDT	Detected between MDL and CRDL
			Silver	0.51	ug/L	J	NDT	Detected between MDL and CRDL
			Zinc	12.3	ug/L	J	NDT	Detected between MDL and CRDL
		CLP PESTICIDE	alpha-BHC	0.0014	ug/L	JP	NDT	Detected between MDL and CRDL, second column differed by >25%
93	MW48-10DL	CLP VOA	Chloroethane	290	ug/L	DJ	NDT	Analysis of diluted sample produced result between MDL and CRDL
93	MW49-10	CLP VOA	Chloroethane	210	ug/L	J	NDT	Result between MDL and CRDL
93	MW48-10	ICP Metals Ind	Arsenic	6.6	ug/L	J	NDT	Result between MDL and CRDL
			Lead	1.3	ug/L	J	NDT	Result between MDL and CRDL
93	MW9R-10	ICP Metals Ind	Arsenic	2.1	ug/L	J	NDT	Result between MDL and CRDL

Notes:

J - Estimated

MDL - Method detection limit

MS/MSD - Matrix Spike/Matrix Spike Duplicate

ug/L - Micrograms per liter

ACS SDG 00095
Duplicate Comparisons

	PWB10	PWB10D	RPD
Metals	ug/L	ug/L	
Barium	125	122	2.43%
Calcium	87,600	85,500	2.43%
Chromium	2	2.9	27.45%
Cobalt	ND	0.9	NA
Copper	4	6.6	49.06%
Iron	3,300	3,060	7.55%
Magnesium	41,600	40,500	2.68%
Manganese	59.6	57.6	3.41%
Nickel	3	3.2	6.45%
Potassium	1,620	1,600	1.24%
Sodium	16,600	16,400	1.21%
Zinc	10.4	16.4	44.78%
VOCs			
Methylene Chloride	1	4	120.00%
Toluene	0.1	0.2	66.67%
SVOCs	All ND	All ND	NA
Pesticides	2 hits, JP flagged	All ND	NA

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW9R-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959161

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: CN059161A54

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/25/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	670	E
75-35-4-----	1,1-Dichloroethene	10	U
71-55-6-----	1,1,1-Trichloroethane	10	U
79-01-6-----	Trichloroethene	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	140	
127-18-4-----	Tetrachloroethene	10	U
156-60-5-----	trans-1,2-Dichloroethene	10	U
156-59-2-----	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW9R-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959161

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: cn059161a54

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/25/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-09-2	METHYLENE CHLORIDE	9.52	8	NJ
2. 1825-61-2	SILANE, METHOXYTRIMETHYL-	10.02	5	NJ
3. 108-20-3	DIISOPROPYL ETHER	11.29	9	NJ
4. 111-43-3	DI-N-PROPYL ETHER	14.06	14	NJ
5. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	22.20	5	NJ
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW9R-10DL

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959161

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: C2R59161A51

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/29/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 5.6

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L Q

75-01-4-----	Vinyl Chloride	56	U
75-00-3-----	Chloroethane	650	D
75-35-4-----	1,1-Dichloroethene	56	U
71-55-6-----	1,1,1-Trichloroethane	56	U
79-01-6-----	Trichloroethene	56	U
79-00-5-----	1,1,2-Trichloroethane	56	U
71-43-2-----	Benzene	120	D
127-18-4-----	Tetrachloroethene	56	U
156-60-5-----	trans-1,2-Dichloroethene	56	U
156-59-2-----	cis-1,2-Dichloroethene	56	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW9R-10DL

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959161

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: c2r59161a51

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/29/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 5.6

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1
INORGANIC ANALYSES DATA SHEET

MW9R-10

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW10C-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959158

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: CN059158A54

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/25/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	88	
75-35-4-----	1,1-Dichloroethene	10	U
71-55-6-----	1,1,1-Trichloroethane	10	U
79-01-6-----	Trichloroethene	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	83	
127-18-4-----	Tetrachloroethene	10	U
156-60-5-----	trans-1,2-Dichloroethene	10	U
156-59-2-----	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW10C-10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

DAS No.:

SDG No.: 00093

Matrix: (soil/water) WATER

Lab Sample ID: 959158

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: cn059158a54

Level: (low/med) LOW

Date Received: 09/21/99

% Moisture: not dec. _____

Date Analyzed: 09/25/99

GC Column: EQUITY624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1. 60-29-7	ETHER	8.18	1500	NJ
2. 109-99-9	FURAN, TETRAHYDRO-	12.55	66	NJ
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				



APPENDIX E

**VALIDATION NARRATIVE AND LABORATORY REPORTS FROM PRIVATE
WELL SAMPLES**

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958731

Date Received: 09/15/99

Lab File ID: CN058731B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene chloride	1.0	JB
67-64-1	Acetone	5	U
75-15-0	Carbon disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylenes (Total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U

FORM I LCV

OLC02.0

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958731

Date Received: 09/15/99

Lab File ID: CN058731B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958731

Date Received: 09/15/99

Lab File ID: GH058731B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2-----	Phenol	5	U
111-44-4-----	Bis(2-chloroethyl)ether	5	U
95-57-8-----	2-Chlorophenol	5	U
100-51-6-----	Benzyl Alcohol	5	U
95-48-7-----	2-Methylphenol	5	U
108-60-1-----	2,2-oxybis(1-Chloropropane)	5	U
108-39-4-----	3-Methylphenol	19	U
106-44-5-----	4-Methylphenol	5	U
930-55-2-----	N-Nitrosopyrrolidine	19	U
621-64-7-----	N-Nitroso-di-N-propylamine	5	U
98-86-2-----	Acetophenone	5	U
59-89-2-----	N-Nitrosomorpholine	5	U
67-72-1-----	Hexachloroethane	5	U
98-95-3-----	Nitrobenzene	5	U
78-59-1-----	Isophorone	5	U
88-75-5-----	2-Nitrophenol	5	U
105-67-9-----	2,4-Dimethylphenol	5	U
65-85-0-----	Benzoic Acid	96	U
111-91-1-----	Bis(2-chloroethoxy)methane	5	U
120-83-2-----	2,4-Dichlorophenol	5	U
91-20-3-----	Naphthalene	5	U
106-47-8-----	4-Chloroaniline	5	U
87-68-3-----	Hexachlorobutadiene	5	U
59-50-7-----	4-Chloro-3-methylphenol	5	U
91-57-6-----	2-Methylnaphthalene	5	U
77-47-4-----	Hexachlorocyclopentadiene	5	U
88-06-2-----	2,4,6-Trichlorophenol	5	U
95-95-4-----	2,4,5-Trichlorophenol	19	U
91-58-7-----	2-Chloronaphthalene	5	U

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958731

Date Received: 09/15/99

Lab File ID: GH058731B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

88-74-4	2-Nitroaniline	19	U
131-11-3	Dimethylphthalate	5	U
99-65-0	1,3-Dinitrobenzene	10	U
606-20-2	2,6-Dinitrotoluene	5	U
208-96-8	Acenaphthylene	5	U
99-09-2	3-Nitroaniline	19	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	19	U
100-02-7	4-Nitrophenol	19	U
121-14-2	2,4-Dinitrotoluene	5	U
132-64-9	Dibenzofuran	5	U
58-90-2	2,3,4,6-Tetrachlorophenol	10	U
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	19	U
534-52-1	4,6-Dinitro-2-methylphenol	19	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
122-39-4	Diphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	17	U
23950-58-5	Pronamide	5	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
465-73-6	Isodrin	10	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
140-57-8	Aramite	19	U

(1) - Cannot be separated from Diphenylamine

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: COMPUCHEM

Contract: OLC02-REVS

PWA10

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958731

Date Received: 09/15/99

Lab File ID: GH058731B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

510-15-6	Chlorobenzilate	5	U
85-68-7	Butylbenzylphthalate	5	U
53-96-3	2-Acetylaminofluorene	10	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenz(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958731

Date Received: 09/15/99

Lab File ID: GH058731B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000(uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST.CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix: (soil/water) WATER

Lab Sample ID: 958731

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____

Date Received: 09/15/99

Extraction: (SepF/Cont/Sonc) SEPF

Date Extracted: 09/17/99

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 09/29/99

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

319-84-6-----	alpha-BHC	0.050	U
319-85-7-----	beta-BHC	0.050	U
319-86-8-----	delta-BHC	0.050	U
58-89-9-----	gamma-BHC (Lindane)	0.050	U
76-44-8-----	Heptachlor	0.050	U
309-00-2-----	Aldrin	0.050	U
1024-57-3-----	Heptachlor epoxide	0.050	U
959-98-8-----	Endosulfan I	0.050	U
60-57-1-----	Dieldrin	0.10	U
72-55-9-----	4,4'-DDE	0.10	U
72-20-8-----	Endrin	0.10	U
33213-65-9-----	Endosulfan II	0.10	U
72-54-8-----	4,4'-DDD	0.10	U
1031-07-8-----	Endosulfan sulfate	0.10	U
50-29-3-----	4,4'-DDT	0.10	U
72-43-5-----	Methoxychlor	0.50	U
53494-70-5-----	Endrin ketone	0.10	U
7421-93-4-----	Endrin aldehyde	0.10	U
5103-71-9-----	alpha-Chlordane	0.0018	J
5103-74-2-----	gamma-Chlordane	0.050	U
8001-35-2-----	Toxaphene	5.0	U
12674-11-2-----	Aroclor-1016	1.0	U
11104-28-2-----	Aroclor-1221	2.0	U
11141-16-5-----	Aroclor-1232	1.0	U
53469-21-9-----	Aroclor-1242	1.0	U
12672-29-6-----	Aroclor-1248	1.0	U
11097-69-1-----	Aroclor-1254	1.0	U
11096-82-5-----	Aroclor-1260	1.0	U

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PWA10

Lab Name: COMPUCHEM

Contract: ILM04.0

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix (soil/water): WATER

Lab Sample ID: 958731

Level (low/med): LOW

Date Received: 09/15/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.2	U		P
7440-36-0	Antimony	3.3	B		P
7440-38-2	Arsenic	2.0	U		P
7440-39-3	Barium	110	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	U		P
7440-70-2	Calcium	78400			P
7440-47-3	Chromium	1.9	B		P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	3.2	B		P
7439-89-6	Iron	2310			P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	38400			P
7439-96-5	Manganese	46.8			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	2.4	B		P
7440-09-7	Potassium	1580	B		P
7782-49-2	Selenium	3.1	U		P
7440-22-4	Silver	0.30	B		P
7440-23-5	Sodium	16200		E	P
7440-28-0	Thallium	4.1	U		P
7440-62-2	Vanadium	0.82	B		P
7440-66-6	Zinc	62.2		E	P
	Cyanide	2.8	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

Duplicate (PWA10D)

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958729

Date Received: 09/15/99

Lab File ID: CN058729B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3-----	Chloromethane	1	U
74-83-9-----	Bromomethane	1	U
75-01-4-----	Vinyl chloride	1	U
75-00-3-----	Chloroethane	1	U
75-09-2-----	Methylene chloride	1	JB
67-64-1-----	Acetone	5	U
75-15-0-----	Carbon disulfide	1	U
75-35-4-----	1,1-Dichloroethene	1	U
75-34-3-----	1,1-Dichloroethane	1	U
156-59-2-----	cis-1,2-Dichloroethene	1	U
156-60-5-----	trans-1,2-Dichloroethene	1	U
67-66-3-----	Chloroform	1	U
107-06-2-----	1,2-Dichloroethane	1	U
78-93-3-----	2-Butanone	5	U
74-97-5-----	Bromochloromethane	1	U
71-55-6-----	1,1,1-Trichloroethane	1	U
56-23-5-----	Carbon tetrachloride	1	U
75-27-4-----	Bromodichloromethane	1	U
78-87-5-----	1,2-Dichloropropane	1	U
10061-01-5-----	cis-1,3-Dichloropropene	1	U
79-01-6-----	Trichloroethene	1	U
124-48-1-----	Dibromochloromethane	1	U
79-00-5-----	1,1,2-Trichloroethane	1	U
71-43-2-----	Benzene	1	U
10061-02-6-----	trans-1,3-Dichloropropene	1	U
75-25-2-----	Bromoform	1	U
108-10-1-----	4-Methyl-2-pentanone	5	U
591-78-6-----	2-Hexanone	5	U
127-18-4-----	Tetrachloroethene	1	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1	U
106-93-4-----	1,2-Dibromoethane	1	U
108-88-3-----	Toluene	0.1	J
108-90-7-----	Chlorobenzene	1	U
100-41-4-----	Ethylbenzene	1	U
100-42-5-----	Styrene	1	U
1330-20-7-----	Xylenes (Total)	1	U
541-73-1-----	1,3-Dichlorobenzene	1	U
106-46-7-----	1,4-Dichlorobenzene	1	U
95-50-1-----	1,2-Dichlorobenzene	1	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1	U
120-82-1-----	1,2,4-Trichlorobenzene	1	U

FORM I LCV

OLC02.0

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958729

Date Received: 09/15/99

Lab File ID: CN058729B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958730

Date Received: 09/15/99

Lab File ID: CN058730B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene chloride	4	B
67-64-1	Acetone	5	U
75-15-0	Carbon disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	0.2	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylenes (Total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U

FORM I LCV

OLC02.0

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958730

Date Received: 09/15/99

Lab File ID: CN058730B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958729

Date Received: 09/15/99

Lab File ID: GH058729B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume:

1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2-----	Phenol	5	U
111-44-4-----	Bis(2-chloroethyl) ether	5	U
95-57-8-----	2-Chlorophenol	5	U
100-51-6-----	Benzyl Alcohol	5	U
95-48-7-----	2-Methylphenol	5	U
108-60-1-----	2,2-oxybis(1-Chloropropane)	5	U
108-39-4-----	3-Methylphenol	20	U
106-44-5-----	4-Methylphenol	5	U
930-55-2-----	N-Nitrosopyrrolidine	20	U
621-64-7-----	N-Nitroso-di-N-propylamine	5	U
98-86-2-----	Acetophenone	5	U
59-89-2-----	N-Nitrosomorpholine	5	U
67-72-1-----	Hexachloroethane	5	U
98-95-3-----	Nitrobenzene	5	U
78-59-1-----	Isophorone	5	U
88-75-5-----	2-Nitrophenol	5	U
105-67-9-----	2,4-Dimethylphenol	5	U
65-85-0-----	Benzoic Acid	98	U
111-91-1-----	Bis(2-chloroethoxy)methane	5	U
120-83-2-----	2,4-Dichlorophenol	5	U
91-20-3-----	Naphthalene	5	U
106-47-8-----	4-Chloroaniline	5	U
87-68-3-----	Hexachlorobutadiene	5	U
59-50-7-----	4-Chloro-3-methylphenol	5	U
91-57-6-----	2-Methylnaphthalene	5	U
77-47-4-----	Hexachlorocyclopentadiene	5	U
88-06-2-----	2,4,6-Trichlorophenol	5	U
95-95-4-----	2,4,5-Trichlorophenol	20	U
91-58-7-----	2-Chloronaphthalene	5	U

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958729

Date Received: 09/15/99

Lab File ID: GH058729B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

88-74-4-----	2-Nitroaniline	20	U
131-11-3-----	Dimethylphthalate	5	U
99-65-0-----	1,3-Dinitrobenzene	10	U
606-20-2-----	2,6-Dinitrotoluene	5	U
208-96-8-----	Acenaphthylene	5	U
99-09-2-----	3-Nitroaniline	20	U
83-32-9-----	Acenaphthene	5	U
51-28-5-----	2,4-Dinitrophenol	20	U
100-02-7-----	4-Nitrophenol	20	U
121-14-2-----	2,4-Dinitrotoluene	5	U
132-64-9-----	Dibenzofuran	5	U
58-90-2-----	2,3,4,6-Tetrachlorophenol	10	U
84-66-2-----	Diethylphthalate	5	U
7005-72-3-----	4-Chlorophenyl-phenylether	5	U
86-73-7-----	Fluorene	5	U
100-01-6-----	4-Nitroaniline	20	U
534-52-1-----	4,6-Dinitro-2-methylphenol	20	U
86-30-6-----	N-Nitrosodiphenylamine (1)	5	U
122-39-4-----	Diphenylamine	10	U
101-55-3-----	4-Bromophenyl-phenylether	5	U
118-74-1-----	Hexachlorobenzene	5	U
87-86-5-----	Pentachlorophenol	18	U
23950-58-5-----	Pronamide	5	U
85-01-8-----	Phenanthrene	5	U
120-12-7-----	Anthracene	5	U
84-74-2-----	Di-n-butylphthalate	5	U
465-73-6-----	Isodrin	10	U
206-44-0-----	Fluoranthene	5	U
129-00-0-----	Pyrene	5	U
140-57-8-----	Aramite	20	U

(1) - Cannot be separated from Diphenylamine

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958729

Date Received: 09/15/99

Lab File ID: GH058729B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

510-15-6	Chlorobenzilate	5	U
85-68-7	Butylbenzylphthalate	5	U
53-96-3	2-Acetylaminofluorene	10	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenz(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958729

Date Received: 09/15/99

Lab File ID: GH058729B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST.CONC. (ug/L)	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958730

Date Received: 09/15/99

Lab File ID: GH058730B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume:

1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

108-95-2-----	Phenol	5	U
111-44-4-----	Bis(2-chloroethyl) ether	5	U
95-57-8-----	2-Chlorophenol	5	U
100-51-6-----	Benzyl Alcohol	5	U
95-48-7-----	2-Methylphenol	5	U
108-60-1-----	2,2-oxybis(1-Chloropropane)	5	U
108-39-4-----	3-Methylphenol	20	U
106-44-5-----	4-Methylphenol	5	U
930-55-2-----	N-Nitrosopyrrolidine	20	U
621-64-7-----	N-Nitroso-di-N-propylamine	5	U
98-86-2-----	Acetophenone	5	U
59-89-2-----	N-Nitrosomorpholine	5	U
67-72-1-----	Hexachloroethane	5	U
98-95-3-----	Nitrobenzene	5	U
78-59-1-----	Isophorone	5	U
88-75-5-----	2-Nitrophenol	5	U
105-67-9-----	2,4-Dimethylphenol	5	U
65-85-0-----	Benzoic Acid	98	U
111-91-1-----	Bis(2-chloroethoxy) methane	5	U
120-83-2-----	2,4-Dichlorophenol	5	U
91-20-3-----	Naphthalene	5	U
106-47-8-----	4-Chloroaniline	5	U
87-68-3-----	Hexachlorobutadiene	5	U
59-50-7-----	4-Chloro-3-methylphenol	5	U
91-57-6-----	2-Methylnaphthalene	5	U
77-47-4-----	Hexachlorocyclopentadiene	5	U
88-06-2-----	2,4,6-Trichlorophenol	5	U
95-95-4-----	2,4,5-Trichlorophenol	20	U
91-58-7-----	2-Chloronaphthalene	5	U

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958730

Date Received: 09/15/99

Lab File ID: GH058730B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

88-74-4-----	2-Nitroaniline	20	U
131-11-3-----	Dimethylphthalate	5	U
99-65-0-----	1,3-Dinitrobenzene	10	U
606-20-2-----	2,6-Dinitrotoluene	5	U
208-96-8-----	Acenaphthylene	5	U
99-09-2-----	3-Nitroaniline	20	U
83-32-9-----	Acenaphthene	5	U
51-28-5-----	2,4-Dinitrophenol	20	U
100-02-7-----	4-Nitrophenol	20	U
121-14-2-----	2,4-Dinitrotoluene	5	U
132-64-9-----	Dibenzofuran	5	U
58-90-2-----	2,3,4,6-Tetrachlorophenol	10	U
84-66-2-----	Diethylphthalate	5	U
7005-72-3-----	4-Chlorophenyl-phenylether	5	U
86-73-7-----	Fluorene	5	U
100-01-6-----	4-Nitroaniline	20	U
534-52-1-----	4,6-Dinitro-2-methylphenol	20	U
86-30-6-----	N-Nitrosodiphenylamine (1)	5	U
122-39-4-----	Diphenylamine	10	U
101-55-3-----	4-Bromophenyl-phenylether	5	U
118-74-1-----	Hexachlorobenzene	5	U
87-86-5-----	Pentachlorophenol	18	U
23950-58-5-----	Pronamide	5	U
85-01-8-----	Phenanthrene	5	U
120-12-7-----	Anthracene	5	U
84-74-2-----	Di-n-butylphthalate	5	U
465-73-6-----	Isodrin	10	U
206-44-0-----	Fluoranthene	5	U
129-00-0-----	Pyrene	5	U
140-57-8-----	Aramite	20	U

(1) - Cannot be separated from Diphenylamine

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958730

Date Received: 09/15/99

Lab File ID: GH058730B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

510-15-6-----	Chlorobenzilate	5	U
85-68-7-----	Butylbenzylphthalate	5	U
53-96-3-----	2-Acetylaminofluorene	10	U
91-94-1-----	3,3'-Dichlorobenzidine	5	U
56-55-3-----	Benzo(a)anthracene	5	U
218-01-9-----	Chrysene	5	U
117-81-7-----	bis(2-ethylhexyl)phthalate	5	U
117-84-0-----	Di-n-octylphthalate	5	U
205-99-2-----	Benzo(b)fluoranthene	5	U
207-08-9-----	Benzo(k)fluoranthene	5	U
50-32-8-----	Benzo(a)pyrene	5	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	5	U
53-70-3-----	Dibenz(a,h)anthracene	5	U
191-24-2-----	Benzo(g,h,i)perylene	5	U

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958730

Date Received: 09/15/99

Lab File ID: GH058730B64

Date Extracted: 09/17/99

Sample Volume: 1020.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST.CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix: (soil/water) WATER

Lab Sample ID: 958729

Sample wt/vol: 1020 (g/mL) ML

Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____

Date Received: 09/15/99

Extraction: (SepF/Cont/Sonc) SEPF

Date Extracted: 09/17/99

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 09/29/99

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

319-84-6-----	alpha-BHC	0.049	U
319-85-7-----	beta-BHC	0.049	U
319-86-8-----	delta-BHC	0.049	U
58-89-9-----	gamma-BHC (Lindane)	0.049	U
76-44-8-----	Heptachlor	0.049	U
309-00-2-----	Aldrin	0.049	U
1024-57-3-----	Heptachlor epoxide	0.0052	JP
959-98-8-----	Endosulfan I	0.049	U
60-57-1-----	Dieldrin	0.098	U
72-55-9-----	4,4'-DDE	0.098	U
72-20-8-----	Endrin	0.098	U
33213-65-9-----	Endosulfan II	0.098	U
72-54-8-----	4,4'-DDD	0.098	U
1031-07-8-----	Endosulfan sulfate	0.098	U
50-29-3-----	4,4'-DDT	0.098	U
72-43-5-----	Methoxychlor	0.49	U
53494-70-5-----	Endrin ketone	0.098	U
7421-93-4-----	Endrin aldehyde	0.0025	JP
5103-71-9-----	alpha-Chlordane	0.049	U
5103-74-2-----	gamma-Chlordane	0.049	U
8001-35-2-----	Toxaphene	4.9	U
12674-11-2-----	Aroclor-1016	0.98	U
11104-28-2-----	Aroclor-1221	2.0	U
11141-16-5-----	Aroclor-1232	0.98	U
53469-21-9-----	Aroclor-1242	0.98	U
12672-29-6-----	Aroclor-1248	0.98	U
11097-69-1-----	Aroclor-1254	0.98	U
11096-82-5-----	Aroclor-1260	0.98	U

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix: (soil/water) WATER

Lab Sample ID: 958730

Sample wt/vol: 1040 (g/mL) ML

Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____

Date Received: 09/15/99

Extraction: (SepF/Cont/Sonc) SEPF

Date Extracted: 09/17/99

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 09/29/99

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

319-84-6-----	alpha-BHC	0.048	U
319-85-7-----	beta-BHC	0.048	U
319-86-8-----	delta-BHC	0.048	U
58-89-9-----	gamma-BHC (Lindane)	0.048	U
76-44-8-----	Heptachlor	0.048	U
309-00-2-----	Aldrin	0.048	U
1024-57-3-----	Heptachlor epoxide	0.048	U
959-98-8-----	Endosulfan I	0.048	U
60-57-1-----	Dieldrin	0.096	U
72-55-9-----	4,4'-DDE	0.096	U
72-20-8-----	Endrin	0.096	U
33213-65-9-----	Endosulfan II	0.096	U
72-54-8-----	4,4'-DDD	0.096	U
1031-07-8-----	Endosulfan sulfate	0.096	U
50-29-3-----	4,4'-DDT	0.096	U
72-43-5-----	Methoxychlor	0.48	U
53494-70-5-----	Endrin ketone	0.096	U
7421-93-4-----	Endrin aldehyde	0.096	U
5103-71-9-----	alpha-Chlordane	0.048	U
5103-74-2-----	gamma-Chlordane	0.048	U
8001-35-2-----	Toxaphene	4.8	U
12674-11-2-----	Aroclor-1016	0.96	U
11104-28-2-----	Aroclor-1221	1.9	U
11141-16-5-----	Aroclor-1232	0.96	U
53469-21-9-----	Aroclor-1242	0.96	U
12672-29-6-----	Aroclor-1248	0.96	U
11097-69-1-----	Aroclor-1254	0.96	U
11096-82-5-----	Aroclor-1260	0.96	U

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PWB10

Lab Name: COMPUCHEM

Contract: ILM04.0

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix (soil/water): WATER

Lab Sample ID: 958729

Level (low/med): LOW

Date Received: 09/15/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.2	U		P
7440-36-0	Antimony	1.8	U		P
7440-38-2	Arsenic	2.0	U		P
7440-39-3	Barium	125	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	U		P
7440-70-2	Calcium	87600			P
7440-47-3	Chromium	2.2	B		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	4.0	B		P
7439-89-6	Iron	3300			P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	41600			P
7439-96-5	Manganese	59.6			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	1620	B		P
7782-49-2	Selenium	3.1	U		P
7440-22-4	Silver	0.30	U		P
7440-23-5	Sodium	16600		E	P
7440-28-0	Thallium	4.1	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	10.4	B	E	P
	Cyanide	2.8	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PWB10D

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00095

Matrix (soil/water): WATER Lab Sample ID: 958730

Level (low/med): LOW Date Received: 09/15/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.2	U		P
7440-36-0	Antimony	1.8	U		P
7440-38-2	Arsenic	2.0	U		P
7440-39-3	Barium	122	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	U		P
7440-70-2	Calcium	85500			P
7440-47-3	Chromium	2.9	B		P
7440-48-4	Cobalt	0.91	B		P
7440-50-8	Copper	6.6	B		P
7439-89-6	Iron	3060			P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	40500	-		P
7439-96-5	Manganese	57.6			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	1600	B		P
7782-49-2	Selenium	3.1	U		P
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	16400		E	P
7440-28-0	Thallium	4.1	U		P
7440-62-2	Vanadium	0.81	B		P
7440-66-6	Zinc	16.4	B	E	P
	Cyanide	2.8	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958716

Date Received: 09/15/99

Lab File ID: CN058716B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3-----	Chloromethane	1	U
74-83-9-----	Bromomethane	1	U
75-01-4-----	Vinyl chloride	1	U
75-00-3-----	Chloroethane	1	U
75-09-2-----	Methylene chloride	1	JB
67-64-1-----	Acetone	5	U
75-15-0-----	Carbon disulfide	1	U
75-35-4-----	1,1-Dichloroethene	1	U
75-34-3-----	1,1-Dichloroethane	1	U
156-59-2-----	cis-1,2-Dichloroethene	1	U
156-60-5-----	trans-1,2-Dichloroethene	1	U
67-66-3-----	Chloroform	1	U
107-06-2-----	1,2-Dichloroethane	1	U
78-93-3-----	2-Butanone	5	U
74-97-5-----	Bromochloromethane	1	U
71-55-6-----	1,1,1-Trichloroethane	1	U
56-23-5-----	Carbon tetrachloride	1	U
75-27-4-----	Bromodichloromethane	1	U
78-87-5-----	1,2-Dichloropropane	1	U
10061-01-5-----	cis-1,3-Dichloropropene	1	U
79-01-6-----	Trichloroethene	1	U
124-48-1-----	Dibromochloromethane	1	U
79-00-5-----	1,1,2-Trichloroethane	1	U
71-43-2-----	Benzene	1	U
10061-02-6-----	trans-1,3-Dichloropropene	1	U
75-25-2-----	Bromoform	1	U
108-10-1-----	4-Methyl-2-pentanone	5	U
591-78-6-----	2-Hexanone	5	U
127-18-4-----	Tetrachloroethene	1	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1	U
106-93-4-----	1,2-Dibromoethane	1	U
108-88-3-----	Toluene	1	U
108-90-7-----	Chlorobenzene	1	U
100-41-4-----	Ethylbenzene	1	U
100-42-5-----	Styrene	1	U
1330-20-7-----	Xylenes (Total)	1	U
541-73-1-----	1,3-Dichlorobenzene	1	U
106-46-7-----	1,4-Dichlorobenzene	1	U
95-50-1-----	1,2-Dichlorobenzene	1	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1	U
120-82-1-----	1,2,4-Trichlorobenzene	1	U

FORM I LCV

OLC02.0

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958716

Date Received: 09/15/99

Lab File ID: CN058716B54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958716

Date Received: 09/15/99

Lab File ID: GH058716B64

Date Extracted: 09/17/99

Sample Volume: 1030.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
108-95-2-----	Phenol	5	U
111-44-4-----	Bis(2-chloroethyl) ether	5	U
95-57-8-----	2-Chlorophenol	5	U
100-51-6-----	Benzyl Alcohol	5	U
95-48-7-----	2-Methylphenol	5	U
108-60-1-----	2,2-oxybis(1-Chloropropane)	5	U
108-39-4-----	3-Methylphenol	19	U
106-44-5-----	4-Methylphenol	5	U
930-55-2-----	N-Nitrosopyrrolidine	19	U
621-64-7-----	N-Nitroso-di-N-propylamine	5	U
98-86-2-----	Acetophenone	5	U
59-89-2-----	N-Nitrosomorpholine	5	U
67-72-1-----	Hexachloroethane	5	U
98-95-3-----	Nitrobenzene	5	U
78-59-1-----	Isophorone	5	U
88-75-5-----	2-Nitrophenol	5	U
105-67-9-----	2,4-Dimethylphenol	5	U
65-85-0-----	Benzoic Acid	97	U
111-91-1-----	Bis(2-chloroethoxy) methane	5	U
120-83-2-----	2,4-Dichlorophenol	5	U
91-20-3-----	Naphthalene	5	U
106-47-8-----	4-Chloroaniline	5	U
87-68-3-----	Hexachlorobutadiene	5	U
59-50-7-----	4-Chloro-3-methylphenol	5	U
91-57-6-----	2-Methylnaphthalene	5	U
77-47-4-----	Hexachlorocyclopentadiene	5	U
88-06-2-----	2,4,6-Trichlorophenol	5	U
95-95-4-----	2,4,5-Trichlorophenol	19	U
91-58-7-----	2-Chloronaphthalene	5	U

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958716

Date Received: 09/15/99

Lab File ID: GH058716B64

Date Extracted: 09/17/99

Sample Volume: 1030.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
88-74-4-----	2-Nitroaniline	19	U
131-11-3-----	Dimethylphthalate	5	U
99-65-0-----	1,3-Dinitrobenzene	10	U
606-20-2-----	2,6-Dinitrotoluene	5	U
208-96-8-----	Acenaphthylene	5	U
99-09-2-----	3-Nitroaniline	19	U
83-32-9-----	Acenaphthene	5	U
51-28-5-----	2,4-Dinitrophenol	19	U
100-02-7-----	4-Nitrophenol	19	U
121-14-2-----	2,4-Dinitrotoluene	5	U
132-64-9-----	Dibenzofuran	5	U
58-90-2-----	2,3,4,6-Tetrachlorophenol	10	U
84-66-2-----	Diethylphthalate	5	U
7005-72-3-----	4-Chlorophenyl-phenylether	5	U
86-73-7-----	Fluorene	5	U
100-01-6-----	4-Nitroaniline	19	U
534-52-1-----	4,6-Dinitro-2-methylphenol	19	U
86-30-6-----	N-Nitrosodiphenylamine (1)	5	U
122-39-4-----	Diphenylamine	10	U
101-55-3-----	4-Bromophenyl-phenylether	5	U
118-74-1-----	Hexachlorobenzene	5	U
87-86-5-----	Pentachlorophenol	17	U
23950-58-5-----	Pronamide	5	U
85-01-8-----	Phenanthrene	5	U
120-12-7-----	Anthracene	5	U
84-74-2-----	Di-n-butylphthalate	5	U
465-73-6-----	Isodrin	10	U
206-44-0-----	Fluoranthene	5	U
129-00-0-----	Pyrene	5	U
140-57-8-----	Aramite	19	U

(1) - Cannot be separated from Diphenylamine

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958716

Date Received: 09/15/99

Lab File ID: GH058716B64

Date Extracted: 09/17/99

Sample Volume: 1030.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
510-15-6-----	Chlorobenzilate	5	U
85-68-7-----	Butylbenzylphthalate	5	U
53-96-3-----	2-Acetylaminofluorene	10	U
91-94-1-----	3,3'-Dichlorobenzidine	5	U
56-55-3-----	Benzo(a)anthracene	5	U
218-01-9-----	Chrysene	5	U
117-81-7-----	bis(2-ethylhexyl)phthalate	5	U
117-84-0-----	Di-n-octylphthalate	5	U
205-99-2-----	Benzo(b)fluoranthene	5	U
207-08-9-----	Benzo(k)fluoranthene	5	U
50-32-8-----	Benzo(a)pyrene	5	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	5	U
53-70-3-----	Dibenz(a,h)anthracene	5	U
191-24-2-----	Benzo(g,h,i)perylene	5	U

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958716

Date Received: 09/15/99

Lab File ID: GH058716B64

Date Extracted: 09/17/99

Sample Volume: 1030.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000(uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST.CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix: (soil/water) WATER

Lab Sample ID: 958716

Sample wt/vol: 990.0 (g/mL) ML

Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____

Date Received: 09/15/99

Extraction: (SepF/Cont/Sonc) SEPF

Date Extracted: 09/17/99

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 09/29/99

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

319-84-6-----	alpha-BHC	0.050	U
319-85-7-----	beta-BHC	0.050	U
319-86-8-----	delta-BHC	0.050	U
58-89-9-----	gamma-BHC (Lindane)	0.050	U
76-44-8-----	Heptachlor	0.050	U
309-00-2-----	Aldrin	0.050	U
1024-57-3-----	Heptachlor epoxide	0.050	U
959-98-8-----	Endosulfan I	0.050	U
60-57-1-----	Dieldrin	0.10	U
72-55-9-----	4,4'-DDE	0.10	U
72-20-8-----	Endrin	0.10	U
33213-65-9-----	Endosulfan II	0.10	U
72-54-8-----	4,4'-DDD	0.10	U
1031-07-8-----	Endosulfan sulfate	0.10	U
50-29-3-----	4,4'-DDT	0.10	U
72-43-5-----	Methoxychlor	0.50	U
53494-70-5-----	Endrin ketone	0.10	U
7421-93-4-----	Endrin aldehyde	0.10	U
5103-71-9-----	alpha-Chlordane	0.050	U
5103-74-2-----	gamma-Chlordane	0.050	U
8001-35-2-----	Toxaphene	5.0	U
12674-11-2-----	Aroclor-1016	1.0	U
11104-28-2-----	Aroclor-1221	2.0	U
11141-16-5-----	Aroclor-1232	1.0	U
53469-21-9-----	Aroclor-1242	1.0	U
12672-29-6-----	Aroclor-1248	1.0	U
11097-69-1-----	Aroclor-1254	1.0	U
11096-82-5-----	Aroclor-1260	1.0	U

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PWC10

Lab Name: COMPUCHEM

Contract: ILM04.0

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix (soil/water): WATER

Lab Sample ID: 958716

Level (low/med): LOW

Date Received: 09/15/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.2	U		P
7440-36-0	Antimony	2.0	B		P
7440-38-2	Arsenic	2.0	U		P
7440-39-3	Barium	163	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	U		P
7440-70-2	Calcium	84400			P
7440-47-3	Chromium	2.7	B		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	1.9	B		P
7439-89-6	Iron	2570			P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	49700			P
7439-96-5	Manganese	33.4			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	2.3	B		P
7440-09-7	Potassium	2440	B		P
7782-49-2	Selenium	3.1	U		P
7440-22-4	Silver	0.99	B		P
7440-23-5	Sodium	25400		E	P
7440-28-0	Thallium	4.1	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	3.7	B	E	P
	Cyanide	2.8	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958733

Date Received: 09/15/99

Lab File ID: CR058733A54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3-----	Chloromethane	1	U
74-83-9-----	Bromomethane	1	U
75-01-4-----	Vinyl chloride	1	U
75-00-3-----	Chloroethane	1	U
75-09-2-----	Methylene chloride	6	
67-64-1-----	Acetone	5	U
75-15-0-----	Carbon disulfide	1	U
75-35-4-----	1,1-Dichloroethene	1	U
75-34-3-----	1,1-Dichloroethane	1	U
156-59-2-----	cis-1,2-Dichloroethene	1	U
156-60-5-----	trans-1,2-Dichloroethene	1	U
67-66-3-----	Chloroform	1	U
107-06-2-----	1,2-Dichloroethane	1	U
78-93-3-----	2-Butanone	5	U
74-97-5-----	Bromochloromethane	1	U
71-55-6-----	1,1,1-Trichloroethane	1	U
56-23-5-----	Carbon tetrachloride	1	U
75-27-4-----	Bromodichloromethane	1	U
78-87-5-----	1,2-Dichloropropane	1	U
10061-01-5-----	cis-1,3-Dichloropropene	1	U
79-01-6-----	Trichloroethene	1	U
124-48-1-----	Dibromochloromethane	1	U
79-00-5-----	1,1,2-Trichloroethane	1	U
71-43-2-----	Benzene	1	U
10061-02-6-----	trans-1,3-Dichloropropene	1	U
75-25-2-----	Bromoform	1	U
108-10-1-----	4-Methyl-2-pentanone	5	U
591-78-6-----	2-Hexanone	5	U
127-18-4-----	Tetrachloroethene	1	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1	U
106-93-4-----	1,2-Dibromoethane	1	U
108-88-3-----	Toluene	0.2	J
108-90-7-----	Chlorobenzene	1	U
100-41-4-----	Ethylbenzene	1	U
100-42-5-----	Styrene	1	U
1330-20-7-----	Xylenes (Total)	1	U
541-73-1-----	1,3-Dichlorobenzene	1	U
106-46-7-----	1,4-Dichlorobenzene	1	U
95-50-1-----	1,2-Dichlorobenzene	1	U
96-12-8-----	1,2-Dibromo-3-chloropropane	1	U
120-82-1-----	1,2,4-Trichlorobenzene	1	U

FORM I LCV

OLC02.0

1LCE
 LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958733

Date Received: 09/15/99

Lab File ID: CR058733A54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958733

Date Received: 09/15/99

Lab File ID: GH058733B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

108-95-2-----	Phenol	5	U
111-44-4-----	Bis(2-chloroethyl)ether	5	U
95-57-8-----	2-Chlorophenol	5	U
100-51-6-----	Benzyl Alcohol	5	U
95-48-7-----	2-Methylphenol	5	U
108-60-1-----	2,2-oxybis(1-Chloropropane)	5	U
108-39-4-----	3-Methylphenol	19	U
106-44-5-----	4-Methylphenol	5	U
930-55-2-----	N-Nitrosopyrrolidine	19	U
621-64-7-----	N-Nitroso-di-N-propylamine	5	U
98-86-2-----	Acetophenone	5	U
59-89-2-----	N-Nitrosomorpholine	5	U
67-72-1-----	Hexachloroethane	5	U
98-95-3-----	Nitrobenzene	5	U
78-59-1-----	Isophorone	5	U
88-75-5-----	2-Nitrophenol	5	U
105-67-9-----	2,4-Dimethylphenol	5	U
65-85-0-----	Benzoic Acid	96	U
111-91-1-----	Bis(2-chloroethoxy)methane	5	U
120-83-2-----	2,4-Dichlorophenol	5	U
91-20-3-----	Naphthalene	5	U
106-47-8-----	4-Chloroaniline	5	U
87-68-3-----	Hexachlorobutadiene	5	U
59-50-7-----	4-Chloro-3-methylphenol	5	U
91-57-6-----	2-Methylnaphthalene	5	U
77-47-4-----	Hexachlorocyclopentadiene	5	U
88-06-2-----	2,4,6-Trichlorophenol	5	U
95-95-4-----	2,4,5-Trichlorophenol	19	U
91-58-7-----	2-Chloronaphthalene	5	U

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958733

Date Received: 09/15/99

Lab File ID: GH058733B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume:

1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

88-74-4-----	2-Nitroaniline	19	U
131-11-3-----	Dimethylphthalate	5	U
99-65-0-----	1,3-Dinitrobenzene	10	U
606-20-2-----	2,6-Dinitrotoluene	5	U
208-96-8-----	Acenaphthylene	5	U
99-09-2-----	3-Nitroaniline	19	U
83-32-9-----	Acenaphthene	5	U
51-28-5-----	2,4-Dinitrophenol	19	U
100-02-7-----	4-Nitrophenol	19	U
121-14-2-----	2,4-Dinitrotoluene	5	U
132-64-9-----	Dibenzofuran	5	U
58-90-2-----	2,3,4,6-Tetrachlorophenol	10	U
84-66-2-----	Diethylphthalate	5	U
7005-72-3-----	4-Chlorophenyl-phenylether	5	U
86-73-7-----	Fluorene	5	U
100-01-6-----	4-Nitroaniline	19	U
534-52-1-----	4,6-Dinitro-2-methylphenol	19	U
86-30-6-----	N-Nitrosodiphenylamine (1)	5	U
122-39-4-----	Diphenylamine	10	U
101-55-3-----	4-Bromophenyl-phenylether	5	U
118-74-1-----	Hexachlorobenzene	5	U
87-86-5-----	Pentachlorophenol	17	U
23950-58-5-----	Pronamide	5	U
85-01-8-----	Phenanthrene	5	U
120-12-7-----	Anthracene	5	U
84-74-2-----	Di-n-butylphthalate	5	U
465-73-6-----	Isodrin	10	U
206-44-0-----	Fluoranthene	5	U
129-00-0-----	Pyrene	5	U
140-57-8-----	Aramite	19	U

(1) - Cannot be separated from Diphenylamine

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: COMPUCHEM

Contract: OLC02-REVS

PWD10

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958733

Date Received: 09/15/99

Lab File ID: GH058733B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

510-15-6-----	Chlorobenzilate	5	U
85-68-7-----	Butylbenzylphthalate	5	U
53-96-3-----	2-Acetylaminofluorene	10	U
91-94-1-----	3,3'-Dichlorobenzidine	5	U
56-55-3-----	Benzo(a)anthracene	5	U
218-01-9-----	Chrysene	5	U
117-81-7-----	bis(2-ethylhexyl)phthalate	5	U
117-84-0-----	Di-n-octylphthalate	5	U
205-99-2-----	Benzo(b)fluoranthene	5	U
207-08-9-----	Benzo(k)fluoranthene	5	U
50-32-8-----	Benzo(a)pyrene	5	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	5	U
53-70-3-----	Dibenz(a,h)anthracene	5	U
191-24-2-----	Benzo(g,h,i)perylene	5	U

1LCF
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958733

Date Received: 09/15/99

Lab File ID: GH058733B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume:

1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST.CONC. (ug/L)	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix: (soil/water) WATER

Lab Sample ID: 958733

Sample wt/vol: 960.0 (g/mL) ML

Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____

Date Received: 09/15/99

Extraction: (SepF/Cont/Sonc) SONC

Date Extracted: 09/17/99

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 09/29/99

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

319-84-6-----alpha-BHC	0.052	U
319-85-7-----beta-BHC	0.052	U
319-86-8-----delta-BHC	0.052	U
58-89-9-----gamma-BHC (Lindane)	0.052	U
76-44-8-----Heptachlor	0.052	U
309-00-2-----Aldrin	0.052	U
1024-57-3-----Heptachlor epoxide	0.052	U
959-98-8-----Endosulfan I	0.052	U
60-57-1-----Dieldrin	0.10	U
72-55-9-----4,4'-DDE	0.011	JP
72-20-8-----Endrin	0.10	U
33213-65-9-----Endosulfan II	0.10	U
72-54-8-----4,4'-DDD	0.10	U
1031-07-8-----Endosulfan sulfate	0.10	U
50-29-3-----4,4'-DDT	0.10	U
72-43-5-----Methoxychlor	0.52	U
53494-70-5-----Endrin ketone	0.10	U
7421-93-4-----Endrin aldehyde	0.10	U
5103-71-9-----alpha-Chlordane	0.052	U
5103-74-2-----gamma-Chlordane	0.052	U
8001-35-2-----Toxaphene	5.2	U
12674-11-2-----Aroclor-1016	1.0	U
11104-28-2-----Aroclor-1221	2.1	U
11141-16-5-----Aroclor-1232	1.0	U
53469-21-9-----Aroclor-1242	1.0	U
12672-29-6-----Aroclor-1248	1.0	U
11097-69-1-----Aroclor-1254	1.0	U
11096-82-5-----Aroclor-1260	1.0	U

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PWD10

Lab Name: COMPUCHEM

Contract: ILM04.0

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix (soil/water): WATER

Lab Sample ID: 958733

Level (low/med): LOW

Date Received: 09/15/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.2	U		P
7440-36-0	Antimony	3.1	B		P
7440-38-2	Arsenic	2.1	B		P
7440-39-3	Barium	155	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	U		P
7440-70-2	Calcium	94200			P
7440-47-3	Chromium	3.5	B		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	1090			P
7439-89-6	Iron	3940			P
7439-92-1	Lead	39.8			P
7439-95-4	Magnesium	47600			P
7439-96-5	Manganese	43.4			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	74.6			P
7440-09-7	Potassium	2310	B		P
7782-49-2	Selenium	3.1	U		P
7440-22-4	Silver	0.30	B		P
7440-23-5	Sodium	21100		E	P
7440-28-0	Thallium	4.1	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	1180		E	P
	Cyanide				NR

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958732

Date Received: 09/15/99

Lab File ID: CR058732A54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
74-87-3	Chloromethane	1	U
74-83-9	Bromomethane	1	U
75-01-4	Vinyl chloride	1	U
75-00-3	Chloroethane	1	U
75-09-2	Methylene chloride	3	
67-64-1	Acetone	5	U
75-15-0	Carbon disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
156-59-2	cis-1,2-Dichloroethene	1	U
156-60-5	trans-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
74-97-5	Bromochloromethane	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylenes (Total)	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U

FORM I LCV

OLC02.0

1LCE
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958732

Date Received: 09/15/99

Lab File ID: CR058732A54

Date Analyzed: 09/22/99

Purge Volume: 25.0 (mL)

Dilution Factor: 1.0

GC Column: EQUITY624 ID: 0.53 (mm) Length: 30 (m)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1LCB
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958732

Date Received: 09/15/99

Lab File ID: GH058732B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

108-95-2	Phenol	5	U
111-44-4	Bis(2-chloroethyl) ether	5	U
95-57-8	2-Chlorophenol	5	U
100-51-6	Benzyl Alcohol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2-oxybis(1-Chloropropane)	5	U
108-39-4	3-Methylphenol	19	U
106-44-5	4-Methylphenol	5	U
930-55-2	N-Nitrosopyrrolidine	19	U
621-64-7	N-Nitroso-di-N-propylamine	5	U
98-86-2	Acetophenone	5	U
59-89-2	N-Nitrosomorpholine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
65-85-0	Benzoic Acid	96	U
111-91-1	Bis(2-chloroethoxy)methane	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	19	U
91-58-7	2-Chloronaphthalene	5	U

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958732

Date Received: 09/15/99

Lab File ID: GH058732B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
---------	----------	-------------------------	---

88-74-4-----	2-Nitroaniline	19	U
131-11-3-----	Dimethylphthalate	5	U
99-65-0-----	1,3-Dinitrobenzene	10	U
606-20-2-----	2,6-Dinitrotoluene	5	U
208-96-8-----	Acenaphthylene	5	U
99-09-2-----	3-Nitroaniline	19	U
83-32-9-----	Acenaphthene	5	U
51-28-5-----	2,4-Dinitrophenol	19	U
100-02-7-----	4-Nitrophenol	19	U
121-14-2-----	2,4-Dinitrotoluene	5	U
132-64-9-----	Dibenzofuran	5	U
58-90-2-----	2,3,4,6-Tetrachlorophenol	10	U
84-66-2-----	Diethylphthalate	5	U
7005-72-3-----	4-Chlorophenyl-phenylether	5	U
86-73-7-----	Fluorene	5	U
100-01-6-----	4-Nitroaniline	19	U
534-52-1-----	4,6-Dinitro-2-methylphenol	19	U
86-30-6-----	N-Nitrosodiphenylamine (1)	5	U
122-39-4-----	Diphenylamine	10	U
101-55-3-----	4-Bromophenyl-phenylether	5	U
118-74-1-----	Hexachlorobenzene	5	U
87-86-5-----	Pentachlorophenol	17	U
23950-58-5-----	Pronamide	5	U
85-01-8-----	Phenanthrene	5	U
120-12-7-----	Anthracene	5	U
84-74-2-----	Di-n-butylphthalate	5	U
465-73-6-----	Isodrin	10	U
206-44-0-----	Fluoranthene	5	U
129-00-0-----	Pyrene	5	U
140-57-8-----	Aramite	19	U

(1) - Cannot be separated from Diphenylamine

1LCC
LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958732

Date Received: 09/15/99

Lab File ID: GH058732B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

CAS NO.	COMPOUND	CONCENTRATION (ug/L)	Q
510-15-6-----	Chlorobenzilate	5	U
85-68-7-----	Butylbenzylphthalate	5	U
53-96-3-----	2-Acetylaminofluorene	10	U
91-94-1-----	3,3'-Dichlorobenzidine	5	U
56-55-3-----	Benzo(a)anthracene	5	U
218-01-9-----	Chrysene	5	U
117-81-7-----	bis(2-ethylhexyl)phthalate	5	U
117-84-0-----	Di-n-octylphthalate	5	U
205-99-2-----	Benzo(b)fluoranthene	5	U
207-08-9-----	Benzo(k)fluoranthene	5	U
50-32-8-----	Benzo(a)pyrene	5	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	5	U
53-70-3-----	Dibenz(a,h)anthracene	5	U
191-24-2-----	Benzo(g,h,i)perylene	5	U

LOW CONC. WATER SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

PWY10

Lab Name: COMPUCHEM

Contract: OLC02-REVS

Lab Code: LIBRTY

Case No.: 34200

SAS No.:

SDG No.: 00095

Lab Sample ID: 958732

Date Received: 09/15/99

Lab File ID: GH058732B64

Date Extracted: 09/17/99

Sample Volume: 1040.00 (mL)

Date Analyzed: 09/21/99

Concentrated Extract Volume: 1000 (uL)

Dilution Factor: 1.0

Injection Volume: 1 (uL)

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (ug/L)	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: OLM03-REVS

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix: (soil/water) WATER

Lab Sample ID: 958732

Sample wt/vol: 1030 (g/mL) ML

Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____

Date Received: 09/15/99

Extraction: (SepF/Cont/Sonc) SEPF

Date Extracted: 09/17/99

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 09/29/99

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

319-84-6-----	alpha-BHC	0.0014	JP
319-85-7-----	beta-BHC	0.048	U
319-86-8-----	delta-BHC	0.048	U
58-89-9-----	gamma-BHC (Lindane)	0.048	U
76-44-8-----	Heptachlor	0.048	U
309-00-2-----	Aldrin	0.048	U
1024-57-3-----	Heptachlor epoxide	0.048	U
959-98-8-----	Endosulfan I	0.048	U
60-57-1-----	Dieldrin	0.097	U
72-55-9-----	4,4'-DDE	0.097	U
72-20-8-----	Endrin	0.097	U
33213-65-9-----	Endosulfan II	0.097	U
72-54-8-----	4,4'-DDD	0.097	U
1031-07-8-----	Endosulfan sulfate	0.097	U
50-29-3-----	4,4'-DDT	0.097	U
72-43-5-----	Methoxychlor	0.48	U
53494-70-5-----	Endrin ketone	0.097	U
7421-93-4-----	Endrin aldehyde	0.097	U
5103-71-9-----	alpha-Chlordane	0.048	U
5103-74-2-----	gamma-Chlordane	0.048	U
8001-35-2-----	Toxaphene	4.8	U
12674-11-2-----	Aroclor-1016	0.97	U
11104-28-2-----	Aroclor-1221	1.9	U
11141-16-5-----	Aroclor-1232	0.97	U
53469-21-9-----	Aroclor-1242	0.97	U
12672-29-6-----	Aroclor-1248	0.97	U
11097-69-1-----	Aroclor-1254	0.97	U
11096-82-5-----	Aroclor-1260	0.97	U

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PWY10

Lab Name: COMPUCHEM

Contract: ILM04.0

Lab Code: COMPU

Case No.: 34200

SAS No.:

SDG No.: 00095

Matrix (soil/water): WATER

Lab Sample ID: 958732

Level (low/med): LOW

Date Received: 09/15/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.2	U		P
7440-36-0	Antimony	1.8	U		P
7440-38-2	Arsenic	2.0	U		P
7440-39-3	Barium	145	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.50	U		P
7440-70-2	Calcium	83800			P
7440-47-3	Chromium	2.4	B		P
7440-48-4	Cobalt	0.60	U		P
7440-50-8	Copper	7.9	B		P
7439-89-6	Iron	3070			P
7439-92-1	Lead	1.0	U		P
7439-95-4	Magnesium	45200			P
7439-96-5	Manganese	32.1			P
7439-97-6	Mercury	0.02	U		CV
7440-02-0	Nickel	1.8	B		P
7440-09-7	Potassium	2420	B		P
7782-49-2	Selenium	3.1	U		P
7440-22-4	Silver	0.51	B		P
7440-23-5	Sodium	24100		E	P
7440-28-0	Thallium	4.1	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	12.3	B	E	P
	Cyanide	2.8	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments: